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Issued Every Month

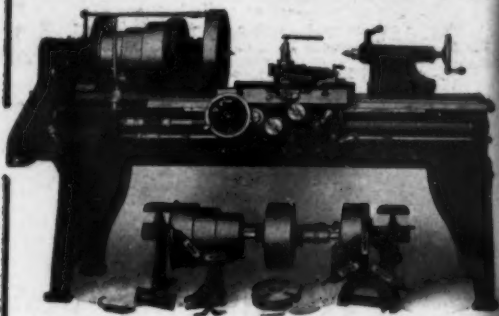
for Free Distribution to Users
of Machine Tools

HITCHCOCK'S MACHINE TOOL LIST

A Reference Book for Buyers
of Iron Working Machinery

Published by
A. H. HITCHCOCK
1220-1235 Caxton Building
Chicago

The New Way



To change from Low to High Gear Speed or vice versa on the Lathe is to make the change without having to stop the machine. It is better, more convenient, and you save time.

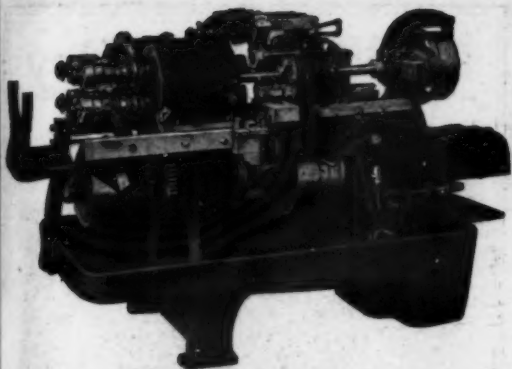
Such changes are made instantly on the **Champion Double Back Gear Lathe** without shock or jar through our patented Positive clutch.

Our Catalogue

of 10, 12, 14, 16 and 18 inch Lathes will explain this and other good features for Lathes.

Champion Tool Works Co.

2426 Spring Grove Ave., Cincinnati, Ohio, U. S. A.



≡ ONE BELT ≡

one Shaft, one set of Gears, and one Lever control all the movements of the Acme Automatic Multiple Spindle Screw Machine. ¶ The advantage over the older system of two belts is at once evident.

¶ The single drive mechanism uses less power, eliminates many of the common difficulties due to belt slippage, aids the operator's convenience, reduces the expense of upkeep and insures more smooth and continuous running of the machine.

ACME—MORE AND BETTER PARTS PER DAY

THE NATIONAL-ACME MFG. CO.
CLEVELAND, OHIO

BRANCH OFFICES: New York, Boston, Detroit,
Chicago, Montreal, Atlanta.

"Hard Service"

Electrically Operated

Drills and Reamers

Built in 6 sizes, scope 0-2 inches



Are you operating to the best advantage in drilling large and heavy parts? You could no doubt save money and time on others by taking a machine to your work instead of the work to the machine. **"Hard Service"** Drills and Reamers are the solution of the problem. Your **ultimate** machines if you want **maximum production at minimum cost.**

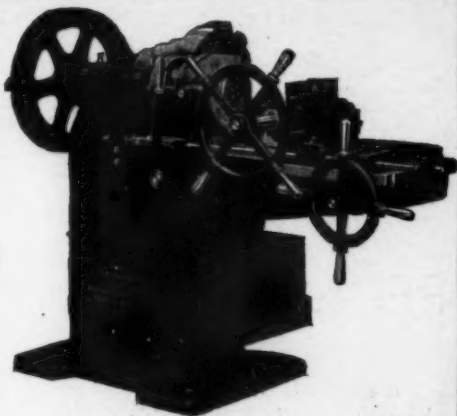
Write for descriptive matter, information and prices.

The Van Dorn & Dutton Co.

General Offices and Factories

Cleveland

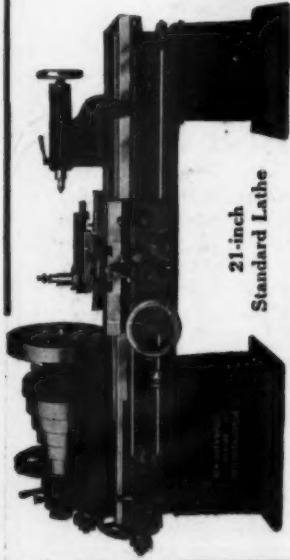
New York - Chicago - Pittsburg - Detroit - San Francisco



Reliance Bolt Cutters

Built in sizes $\frac{3}{4}$ inch to 6 inches, Single, Double and Triple, of the most up-to-date design. There is, also, a good reason why the "Reliance" is such a satisfactory machine for accuracy of threads cut, large production and low cost of maintenance, even in the hands of inexperienced labor. A lot of this reason is in the Opening Die Head, and we would like to tell you all about it. Interesting information for the asking.

The Foote-Burt Co., Makers
Cleveland, Ohio



**21-inch
Standard Lathe**

A Moderate Priced Standard Lathe

of the modern type, with an experience of 60 years and the New Haven Guaranty behind it.

A RIGID, POWERFULLY GEARED TOOL, with either 5-step cone and 3-in. belt, or with 3-step cone, double back gear and 4-in. belt. We also furnish an instantaneous 3-change feed box, giving a very powerful geared drive, with a range of feeds from 5 to 250 per inch, and thread cutting from 1 to 24 threads to the inch. We make this type of lathe 18, 21, 24 and 28 in. swing—the best tools ever offered at the price.

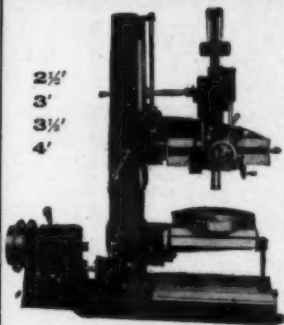
OUR IMPROVED ENGINE LATHES, 24 to 65-in. swing, are the best lathes made at any price, though sold at a figure that is attractive to close buyers.

Tell us your lathe requirements, and let us prove our claims

New Haven Manufacturing Co., - New Haven, Conn.

One Lever Is Scientific

2½'
3'
3½'
4'



Controlling all spindle motions—forward, backward, stop and gear engaged—by one lever is one reason why the

Gang Radial

produces more in a day than other drills. The easy swing of the arm on ball bearings, a speed box with 12 speeds—are other good features that explain its popularity with wide-awake manufacturers.

It will pay you to get posted on this winner and our friction type head, style "G."

The Wm. E. Gang Company
Cincinnati, Ohio



The many Cincinnati Lathes

in use today have proven their lasting accuracy and permanent efficiency. We supply them with **Quick Change** or **Standard All Geared Feed Box** having an unlimited range. Our literature describes in detail these devices, also other advantages in which you ought to share.

The Cincinnati Lathe & Tool Company
2730-32 Spring Grove Avenue, : : : Cincinnati, Ohio

Streit Pulley Machinery

Will Reduce Cost On Your Pulleys

60%

**Just by way of comparison,
Consider the following:**

Equipment (for say 30" pulleys)

2 Engine Lathes at \$1,000.....	\$2,000
1 Streit Pulley Lathe, 30 inch.....	660
Saving in equipment cost.....	\$1,340

Operating Expense

2 Engine Lathe hands, average 24c...\$4.80 day	
1 Streit " " same.....	2.40 "
Saving in labor per day.....	2.40
Or per year 300 days.....	\$720.00

Floor Space

2 30 in. Engine Lathes 4x10 ft.....	80 sq. ft.
1 30 in. Streit " 5x 8 ft.....	40 " "
Saving in floor space.....	40 sq. ft.

**Your Pulley Department Is Neglected
Why Continue The Waste?**

Write us at once

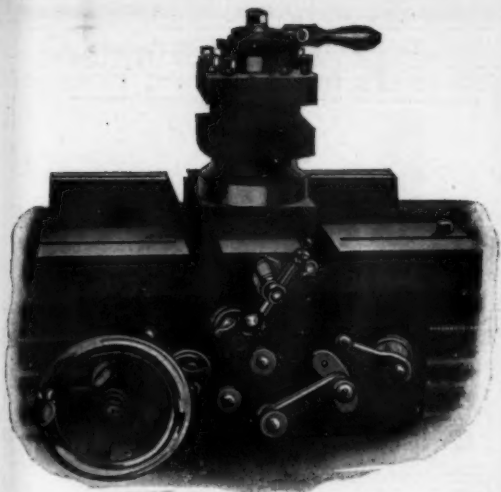
**The Cincinnati Pulley Machinery Co.
Cincinnati, Ohio**

FOU

to go on
they op
to the o
lathe eq

A sing
releases
securely

FAY



We want to furnish you with one of these

Four Sided Tool Posts

to go on your lathe. We fit them to any make of lathe so they operate by the regular cross feed screw. Don't stick to the old fashioned single tool post, but insist on having your lathe equipt with a **Fay & Scott Patented Type**.

A single movement of the lever handle, forward and back, releases the turret, revolves the next tool into position and securely locks the head in position for the next operation.

Send for booklet.

FAY & SCOTT, Dexter, Maine

**Leiman Bros. Positive High Pressure
Blowers and Vacuum Pumps**



Used wherever a blast of air is required; for furnaces, forges, sand blasts, blow pipes; all gas & oil appliances; gas producers.

For Vacuum Cleaning Outfits

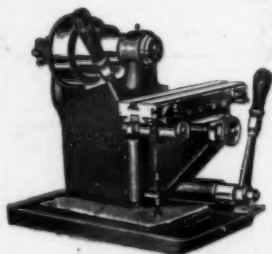
These are the only machines that take up their own wear; small piston gives big air space; no springs or delicate parts; centrifugal force holds wings against cylinder; noiseless; slow speeds.

**8 SIZES \$17 UP
For All Purposes**

*Send for catalog No. 26 for Blowers,
No. 27 for Vacuum Pumps*

LEIMAN BROS., 62 R John St., New York

In A Class By Itself

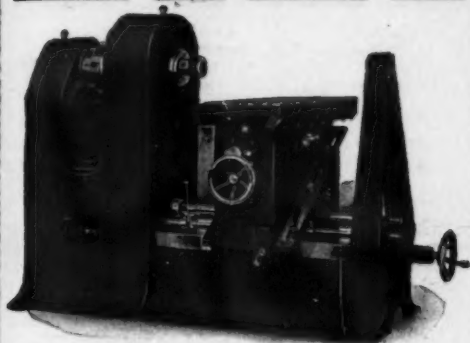


Is our New Model Bench Miller; because, we furnish with the machine our Quick Operating Lever Vise, also Index Centers and two speed friction counter shaft.

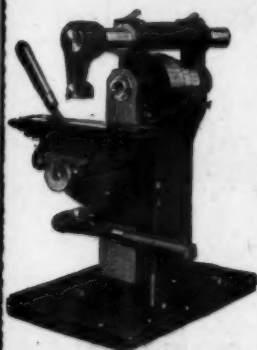
Send for circular

**The Carter & Hakes Co.
West Winsted, Conn., U. S. A.**

Facing and Boring Mill



Weight, 4,500 lbs. Price, \$700.



Bench Miller

A Seasoned Tool

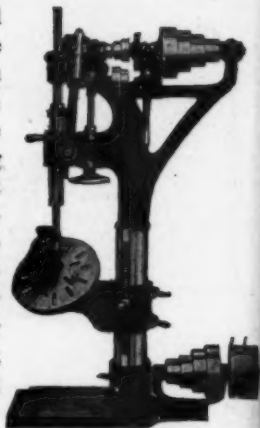
The tool to buy if you want extreme accuracy and permanent alignment five years hence as well as now. In making this miller the greatest care is taken thoroughly to season all castings both before and after machining. We carry these frames and parts from six to eight months after work begins on them before the final finishing is done. The result is a tool that is accurate and will stay accurate as long as you use it. For precision work it has no equal.

Longitudinal feed, 6 in.;
transverse feed, 3½ in.; vertical
motion of knee, 8½ in.;
table surface, 24x12 inch.

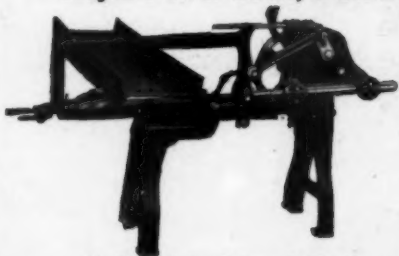
Burke Machine Co., Conneaut, Ohio

The One Big Feature

You can drill holes at any angle at one setting, then duplicate at a 50% saving of time with our **Tilting Table**. Look at its heavy construction to stand up for rapid production with every convenience for the operator. Get our circulars and prices today.



Royal Power Saws, 5 Sizes.



For all kinds of work. They excel for speed and accuracy.

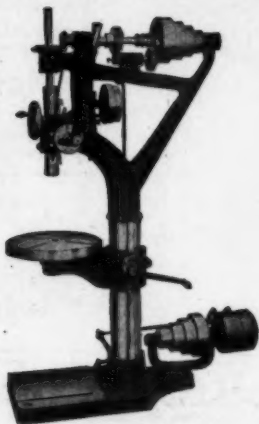
For Sale by the best dealers. Get Circulars.

FRONTIER IRON WORKS

Department A
Letchworth & Grant Streets,

Buffalo, N. Y.

Accurate Machine Tools



Davis 20-Inch Drill

Furnished with Back Gear, Power Feed, Automatic Stop and Quick Return.

A first-class high-grade tool at a reasonable price.

Orders can be sent to us direct or through leading machinery dealers in all parts of the world.

For further particulars address

The W. P. Davis Machine Co.

Rochester, New York, U. S. A.



**Saving \$4,368 in One Year
on an Investment of \$100**

Is Going Some

One of our customers is doing the work of EIGHT men on one of our NOISELESS ROTARY RIVET SPINNING MACHINES, and the operator is a boy.

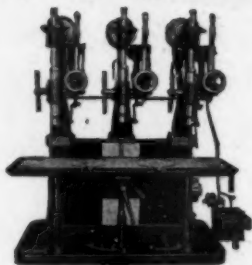
12,000 to 15,000 pieces per day of ten hours, each and every piece perfect in appearance and workmanship.

Let's show you what we can do on your work by sending us a sample unriveted.

Our 1911 catalogue shows our entire line of Riveters. Copy will be sent upon request

**The Grant Mfg. & Machine Co.
Bridgeport, Conn.**

Rockford Gangs



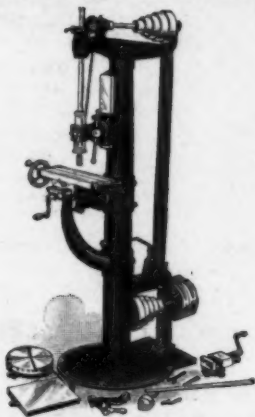
They not only drill, but they bore, ream, tap and face without removing work from jig.

Write for descriptive matter

**Rockford Drilling Machine Company
Rockford, Ill., U. S. A.**

16 Difficult Operations

Our folder gives 16 views of the No. 1 Knight Milling and Drilling Machine, doing what ordinarily would require two or more machines.

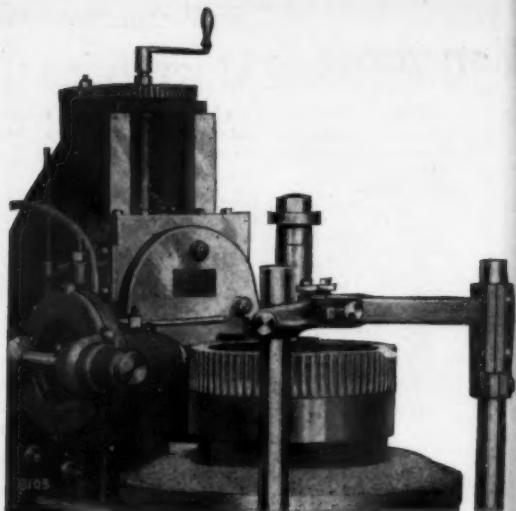


CONVENIENT--that's the word--because it often takes the place of two or more machines on many pieces of work. If you are looking for something to help you reduce your tool room expense, try it out on your die, jig or cam making, or on your experimental work--*it will save you from 20 to 50 per cent.*

The tilting table enables the operator to mill, bore and drill at any desired angle with only one setting of the work. Our No. 1½ and No. 2 are heavier machines of equal convenience.

Write today for our folder; we know you will be interested in the operations illustrated.

W. B. Knight Machinery Co.
St. Louis, Mo.



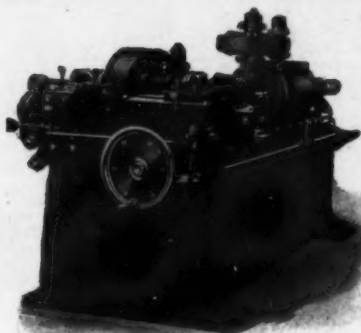
All Teeth Finished at Once on the Farwell Gear Hobber

Note that the teeth on these blanks are all finished half-way across the face instead of being slashed through singly. This distributes evenly all heat generated in cutting, prevents distortion caused by removing metal on one side of blank first, brings cutter in constant contact with new teeth and comparatively cool metal, does away with time lost in backing up and indexing, generates true involute curves on all gear diameters with one hob, and turns out the gears faster than any other method.

Booklet 804-H tells how to figure output.

THE ADAMS COMPANY, 849 Second Street,
Dubuque, Iowa, U. S. A.

Lees Compound Horizontal Gear Generator



A Manufacturing Tool for Hobbing Spur, Spiral and Worm Gears and Threading Worms

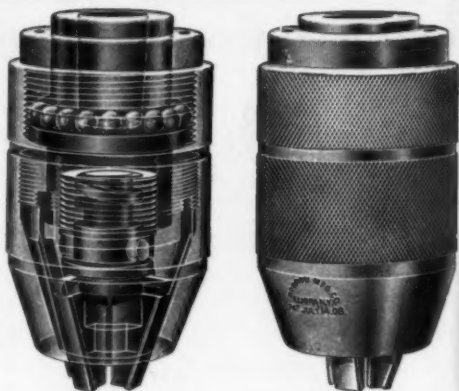
The work arbor is rigidly supported at both ends, and the drive is located half-way between the work and cutter.

The centers of this machine can be brought together without overhang in either work arbor or cutting arbor.

The work spindle and cutter arbor may be rotated at high speed on any pitch for cutting a gear with a small number of teeth, obtained by a compound indexing gear of two distinct ratios.

*Glad to post you on all details of this rapid,
rigid and accurate machine*

The Lees-Bradner Co.
Cleveland, Ohio, U. S. A.



A Chuck That Lasts THE MORROW

The arrangement is so simple, so efficient and so positively certain in action that there is no comparison. The combination of the large ball bearing with the releasing attachment, places this chuck in a class by itself.

You get full value when you use this simple, strong and inexpensive Morrow Drill Chuck.

Drill is securely held, cannot slip, and permits easy release by hand of operator, saves the drill, time, and is THE drill chuck for rapid production and high speed drills.

Write for further data---it will interest you

Made in five sizes

Morrow Manufacturing Co.
Elmira, New York, N. Y.



**Strength—
Accuracy—**

**Simplicity of
Construction**



are combined in our tools. They are all made direct from bar steel and forgings, the best grade of open hearth screw stock being used, together with finest quality of crucible steel.

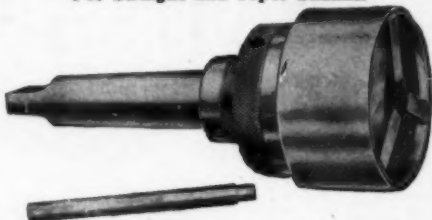
Our Adjustable, Self-Opening Screw-Cutting Die Heads and Collapsing Taps are in general use in Screw Machine work by manufacturers who are operating either hand or automatic Screw Machines.

It may be that **you** have failed to take advantage of our tools, while we have the very **one** that you need ready for you.

Write us about the work you have to do, and we will send you a drawing of the correct tool for the work, with description and price.

The Geometric Tool Company
New Haven, Conn., U. S. A.

Five Main Features Distinguish The
A-C Combination Drill Chuck
 For Straight and Taper Shanks.



Simplicity
Durability

Grip

Strength
Accuracy

Replaces a full set of taper sockets. Guaranteed not to slip.

The Adjustable Collet Co.
 213 High Ave., Cleveland, Ohio

The "Geier" Arbor Press
 Is Built to Stand the Strain



It saves many a mean job of pounding arbors, saves springing, battering, splitting and chipping, and does it all so easily that one wonders how he ever got along without it. Equally efficient for broaching, punching, etc.; in fact, its strong, steady pressure can be utilized in scores of ways, limited only by the shopman's ingenuity. Can be used on bench or on any lathe from 12 to 18-inch swing.

*All "Geier" Tools have exceptional strength.
 Description and prices on request.*

The P. A. Geier Company
 5112 St. Clair Ave., Cleveland, Ohio

Reliance Adjustable Speed Motors

give you the right speed with ample power for every operation on all kinds of work. They are just as simple to install and operate as any constant speed motor---no complicated wiring required.

This Wheel
Controls
the Speed Changes,
no Electrical
Controller Needed



Really accurate speed adjustments over a 1 to 10 range are possible with the Reliance method. The running speeds within the range of the motor are unlimited

and the speed changes are smooth and gradual---no steps---no jumps. The speed control is entirely separate from the starting and stopping of the motor, allowing the shut down of the machine as often as desired without interfering with the speed adjustment. Rugged automatic starters can be used with this motor, making the entire electrical equipment absolutely "fool-proof."

Our Folder 10-L tells in detail why this wonderful motor will make your machines do more work. Write for a copy today.

We can also furnish Reliance Constant Speed Motors for either alternating or direct current circuits.

Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

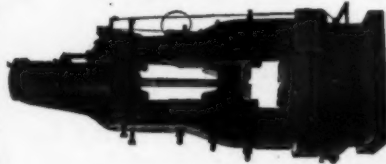
Osborne Steam Hammers and Trimming Presses

Sold direct to users at prices based on actual shop cost, eliminating usual over-head shop charge and dealer's or jobber's profit.

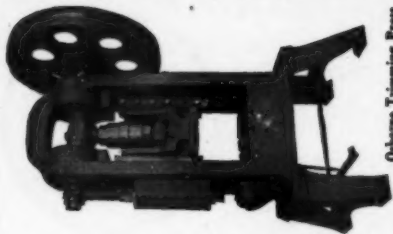
The Osborne Hammers are made of steel castings throughout, except cylinders, which are semi-steel. Operate equally well with compressed air, and are heavy enough to withstand the hardest duty.

Osborne Trimming Presses are equally well built, of latest design, and sold at a price which will astonish you.

*Write for blue prints, photos and full specifications,
together with my direct-to-you price proposition.*



The Osborne Hammer



Osborne Trimming Press

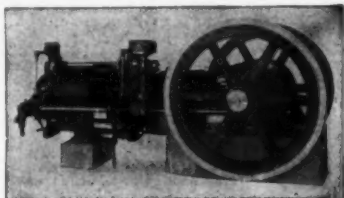
Don M. Osborne, Engineers' Bldg., Cleveland, O.

- It Helps You To Buy A Gas Engine

AN EDUCATION "from the Buyer's Standpoint." You get it when you read our Bulletin No. 22, called "Efficient Gas Power." It tells you:

- 1st. *What to expect from good gas power.*
- 2nd. *About comparing and selecting an engine.*
- 3rd. *How to prove that you got what you bought.*

It contains 48 pages with more than 30 cuts and tables of data. It's mighty plain talk.



"THE LITTLE BIG ENGINE"
(20 to 200 H. P.)

When you have read "Efficient Gas Power" maybe you will find you don't want a Gas Engine at all; maybe you will want ours, or will find you prefer some other kind; but in any case you will know better just what you do want to do, and how to do it.

We gladly mail it free—Just ask for it.

The Elyria Gas Power Co.
Elyria, Ohio

Mono Rail Hoists and Over Head Track Systems



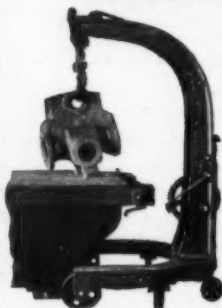
A five ton hoist operated from cab or floor. Used to transfer material from one building to another, for unloading cars, general yard work, etc.

Mono Rail Hoists and trolleys of all types.

Nothing too large or too small, to receive our careful and prompt attention.

The Euclid Crane & Hoist Company
Euclid, Ohio, U. S. A.

Handy Tool or Brute Strength Which Do You Prefer?



Lifting and lugging heavy material around the shop is a relic of barbarism, when it can be done by mechanical methods so much more easily, quickly, safely and cheaply. The

Canton Portable Crane and Hoist

is not an expensive tool, but it often saves more labor than any other machine in the shop, and it certainly is handy.

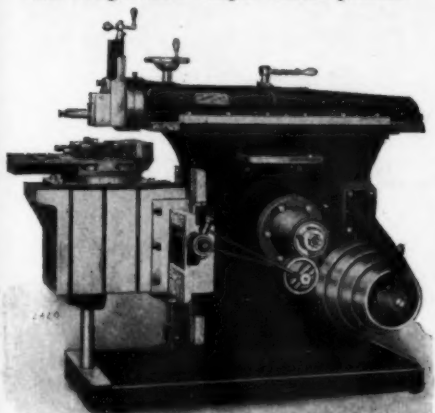
We made it first, by the way, for our own use—better and stronger than anything the market offered. What was our gain may be yours, too.

*Try one at our risk.
Or write for booklet.*

CANTON FOUNDRY & MCHE. CO., Canton, O.

Heavy Duty—Back Geared
"Cincinnati" Crank Shaper

With the Power, Accuracy and Rigidity
that a high class Shaper should possess.



24-inch, Back Geared

THE BEST TOOL MAKER in your shop—or in any shop—would like his work done on a "Cincinnati." You cannot expect the best results from an inferior machine. The finest work requires a shaper built like ours: The material of the highest grades; ample metal throughout; with gearing that makes it the most powerful shaper of its stroke on the market—it stands up under the heaviest strains; and every part is carefully tested, both in manufacturing and in the finished machine.

*If you are interested in big Shaper economy,
send for our free Shaper Book—its good.*

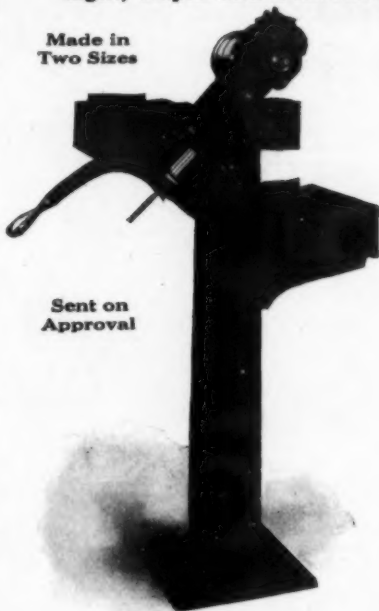
The Cincinnati Shaper Co.

Colerain Ave. and Elam St., CINCINNATI, OHIO

Rapid Screw Slotting

Only One Handling of Screws
Light, Rapid and Convenient

Made in
Two Sizes



Sent on
Approval

Garvin No. 1 Rapid Screw Slotter—Capacity $\frac{1}{4}$ to $\frac{1}{2}$ in. Screws

Send for circular No. 140

IMMEDIATE DELIVERY

Manufactured By

THE GARVIN MACHINE COMPANY
Spring and Varick Sts., New York City

The
of nume

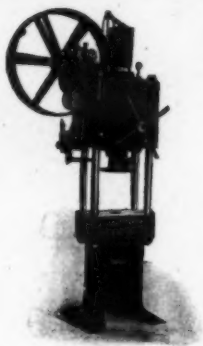
Wats
driving a
pressure

Our
purpose,
ening,
etc., and

The

g

Watson-Stillman Broaching Presses Are handy in any Shop



The press shown (two sizes 30 and 60 tons capacity) is one of numerous patterns that adapt our line to any broaching work.

crews

Watson-Stillman Broaching presses are also excellent for driving arbors and as general utility tools wherever hydraulic pressure is desirable.

Our product includes hydraulic tools for almost every purpose, lifting, lowering, forcing, forging, bending, straightening, punching, shearing, pumping, handling armatures, etc., and a complete line of fittings for all practical pressures.

Tell us your requirements.

NY

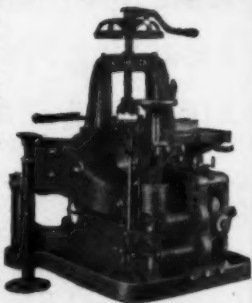
The Watson-Stillman Company

Church & Fulton Sts., New York

Are Your Saw Costs Right?

If you are not sure that your metal sawing costs are at the lowest limit, it will pay you to investigate the "Lea Simplex."

We will be glad to send literature explaining why the purchase of this saw is a true economy.



Lea Equipment Company

West and Cedar Sts.,

New York City.

A 12 Inch Saw, \$100.

Immediate Delivery

Screw Feed and Ball Bearing Thrust

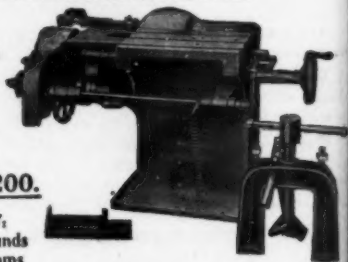
Cuts 3x5 or
1-2x9 inch.

Power Friction
Feed.

Automatic
Knockout.

Large Clamping
Table.

20 in., \$200.

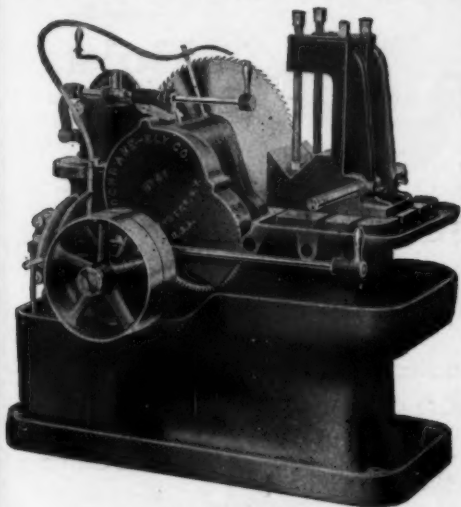


CAPACITY:
5 3/8 Inch Rounds
12 Inch I Beams

Write for particulars

Burke Machine Co., Conneaut, Ohio

Cochrane-Bly Cold Saws



No. 4-B 6" Size

A desirable tool for cutting a variety of stock under average shop conditions. Capacity 6" Round Bars, 5½" Squares, 12" I-Beams, Angles, Channels, etc. Four Feed Changes ranging from 3-16" to 1 3-16" per minute. Automatic trip and quick Automatic return of carriage. Ask for details.

Manufacturers of:

**Metal Sawing Machines, Automatic Saw Sharpeners,
Die Filing Machines**

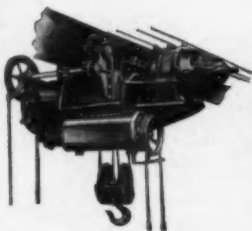
Cochrane-Bly Company
Rochester, N. Y., U. S. A.

Why Be Downhearted

when our

Hoists

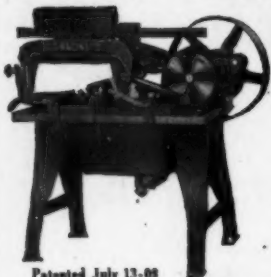
will help you to
make money.



Hoists, Trolleys,
Cranes, Derricks,
Hoisters and Buckets

Victor R. Browning & Co.
Cleveland, Ohio

Racine High Speed



Patented July 13-09

Metal Cutting Machines

Will Cut 6 inch Bar
Machinery Steel
in 28 Minutes.

Speed 125 R. P. M.

Write for Catalog

Address:

Racine Tool & Machine Company
Racine Junction, Wis.

Eastern Representative: Simplex Tool & Supply Co., Boston, Mass.

Are You Satisfied?



With your present results in steel cutting? If you are, then you're not the man we are trying to interest. It's the man who is quick to recognize an improvement and take advantage of it—whom we want to reach and get acquainted with our **ELASTIC WHEEL METAL CUTTING MACHINE**. For cutting steel, iron, brass or copper tubing and pipe up to 3 in. dia. or solid pieces up to $\frac{1}{2}$ in. dia., soft or hard steel, any shape, it's the quickest little machine we know of.

One of its most important advantages: **The material to be cut (any shape) is clamped or may be held by hand, and remains in a fixed position in the V work-shoe.** This will be found to be a far more practical method than that of moving the stock to make the cut. The Elastic Grinding

Wheel is swung forward to take the cut, by either the right or left hand or foot, handles and treadles being provided. After the cut is taken, the wheel upright, which is pivoted at its base, is returned to a stop by means of a spring attached to the treadle.

We equip this machine with a 12x3-32 in. elastic cutting wheel (which never requires sharpening) a countershaft and a light stock support.

With such an equipment, you will be surprised at the saving in Time, Labor and Material.

It is low in price for so valuable a machine, as a trial will show. Try one and see!

Our address is

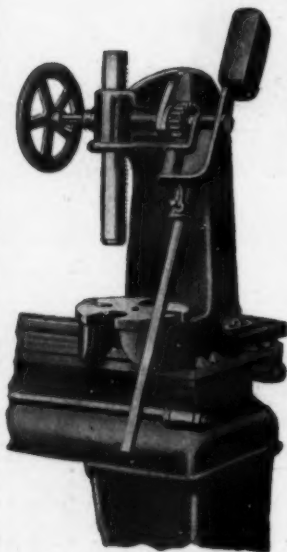
Nutter & Barnes Company

Boston, Mass.

What's yours?

Greenerd Arb

Are the Shop Tools o



Arbor Press on Lathe

The very sound of driving an arbor press mandrel with a sledge is a protest against savagery.

Greenerd Arbor Press force the work out the civilized way, saving temper, material and cold cash.

And think of the hundred and one other kinds of work where they come handy, such as broaching, punching, straightening, bending with dies, and on, limited only by the shop ingenuity.

They are made of various sizes from the little 15-pound No. 1 up to the No. 10 (shown on the right) which weighs 360 pounds, is 36 inches between uprights, and has a maximum pressure of 25 tons, for use in crank pins, bushings, etc.

If you have *any* kind of work requiring steady pressure, whether light or heavy, will do the trick, think of The Greenerd Arbor Press and—get her.

Suppose you push the button now, while you think of it, and let me about

Edwin E. Bartlett, - 316 A

Arbor Presses

Tools of Civilization

of doing an arbor or
edge is a protest against

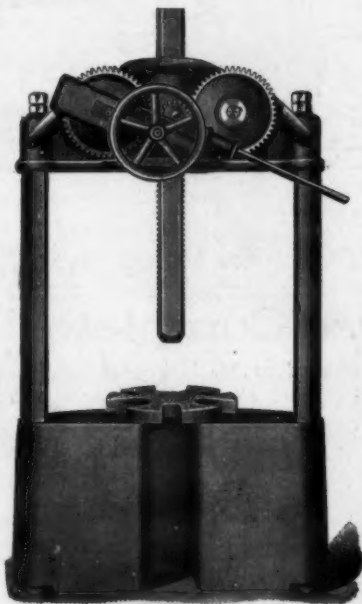
Press force them in
ed way, saving time,
and cost cash.

the hundred and one
work where they come in
boring, punching,
drawing with dies, and so
by the shop man's

of various sizes, from
No. 1 up to the No. 8
(at) which weighs a ton,
seven weights, with a
weight of 25 tons, for forcing
things, etc.

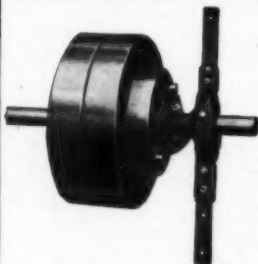
any kind of work where
whether light or heavy,
think The Greenard
get by.

it, and let me about the kind of work you do, and let me prescribe.



336 A St., Boston, Mass.

EDGEMONT FRICTION CLUTCHES



Cut shows our extended sleeve type suitable for mounting wood, iron or steel Pulleys, Gears or Sprockets on the hub.

We also make this clutch **SPLIT** so that it can be applied to any line shaft without taking it down or disturbing any other pulley.

Our **Counter-Shaft Clutches** have been adopted by over 30 machine tool builders. We make special clutches for all purposes, so if you need a

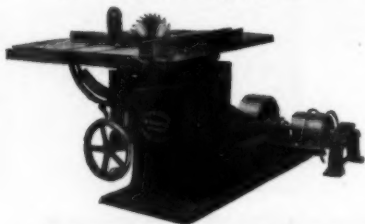
clutch for any purpose, tell us your wants, for we make a clutch to suit your needs.

Write today for catalog.

The Edgemont Machine Co., Ft. of Mound Street,
DAYTON, O.

A Complete Line

of modern Machinery for Pattern Shops, and
all wood working plants.



See our line before buying

Superior Machine Wks. Co.

1726 Dickson St., Chicago, Ill.

Special Wood Working Tools

For Pattern Shops

Machines selected for their precision, and adjustability. Built like machine tools, and designed primarily for pattern shop service.

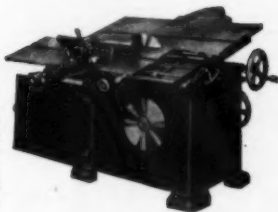
"West Side" Band Saw

Steel wheels, which can neither break, warp, twist or spring; under cut hubs; self-oiling bearings; brass-bushed loose pulley; tilting table; all adjustments made by operator without leaving his position. A band saw widely known for its superiority of design and construction.



Tannewitz Universal Double Saw Arbor

The last word in saw tables for accuracy and convenience. Gauges and adjustments for every possible requirement. A notable improvement upon a type of saw table conceded to be indispensable in every pattern shop.



Porter 20-Inch Jointer

The highest grade jointer or hand planer in market. Patented guard and safety cylinder; specially grooved tables.

We outfit pattern shops complete, guaranteeing the accuracy and efficiency of every tool. Whether you want a full equipment or a single machine, you will find our service helpful.

We shall be pleased to have you consult us

Chicago Machinery Exchange

Manufacturers' Exclusive Representatives

1219-1227 W. Washington Blvd., Chicago

Can furnish used machines, if desired, carefully rebuilt in our own shops and fully guaranteed.



Partridge Emery Grinders

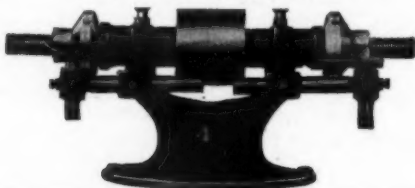
Here are four well-made Bench Grinders, adapted to light, medium and heavy work. Also furnished mounted on column. In addition, I make a high-grade heavy Floor Grinder of the cabinet type, thus being able to meet all demands for this class of tools. They are all well built, of the right materials, and have features of excellence that will interest you.

Tell me your needs in this line, and I will gladly mail full description and quote interesting price

E. O. PARTRIDGE

2047-9 Lake Street, - - CHICAGO

Also Foot Presses and Tapping Machines



Why Spend Hundreds

For a grinder that won't grind drills

When only

\$150

**Buys this machine
Complete for
Cutters, Reamers
and Drills?**



This New Yankee Grinder, Style BX, grinds drills from $\frac{1}{8}$ to $2\frac{1}{4}$ inch diameter; face and side mills up to 12 inch diameter; double or single angle cutters of any degree up to 8 inch; plain milling cutters, straight or spiral teeth, up to 8 inch diameter, 8 inches long; gear cutters up to 6 inch in diameter, reamers up to 8 inch diameter, $12\frac{1}{2}$ inches or more in length, either straight or tapered, with straight or spiral flutes. Two men can use the machine at the same time without either interfering with the other. Sent on a satisfaction-or-money-back guarantee if you wish. Complete catalog describes this machine in detail and over a hundred other interesting grinding machines.

Wilmarth & Morman Co.
575 Canal St., Grand Rapids, Mich.

Forethought Pays The Bill

Buy a Curtis Extractor and in a short time the oil saved pays your bill



No. 400—Capacity: 2 Bushels

After that the saving is yours to use as you wish. Instead of throwing away good oil with your chips and shavings, put in this strong, simple machine, and you begin coining oil money. Inexpensive to install, easily operated, and using but little power, it will prove one of your best cost reducers. Can furnish a steam attachment for cleaning waste. Three sizes.

Write today and get started saving good money

Curtis Oil Extractor Company
95 Foster St., Worcester, Mass.

***Looks like typewriting
Prints through a ribbon***
2,000 and over per hour



A Complete Addressing Outfit

with 500 addresses, \$52.25; with 200 addresses, only \$38.75

The addresses are set in metal type, and you can make your own changes. They can be arranged as desired, indexed, hence are easy to locate. Can either repeat or skip any name, and make carbons. Also foot power and electric machines for large lists.

Description and sample addresses on request.

Cleveland Addressing Machine Co.
1232-1234 E. Third St., Cleveland, Ohio.



JUNK

Men do not get the caps
Of Tucker's Positive Lock
Compression Grease Cups
They Won't Jar Off

For Automobiles and all
kinds of machinery having ex-
cessive vibration. Sample sent
by mail on receipt of cash, check
or money order.

Made in three sizes

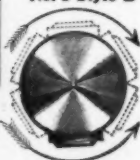
		Price
No. 000	$\frac{3}{8}$ in. $\frac{1}{2}$ in. pipe	\$0.40
No. 00	1 in. $\frac{3}{4}$ in. pipe	0.50
No. 0	1 $\frac{1}{2}$ in. $\frac{3}{4}$ in. pipe	0.60

PATENTED JANUARY 11, 1910

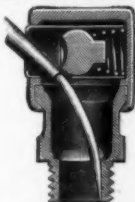
Tucker's Oil Hole Covers



No. 5 Style B



Self Closing



Style C, Self Closing

See the indent of ball valve on styles B & C

Style A



Send for Catalogue of full line for all kinds
of machinery having oil holes

W. C. & F. C. Tucker, Hartford, Conn.

The Morse "Rarefied" Dust Collector

Puts the Horse Before the Cart

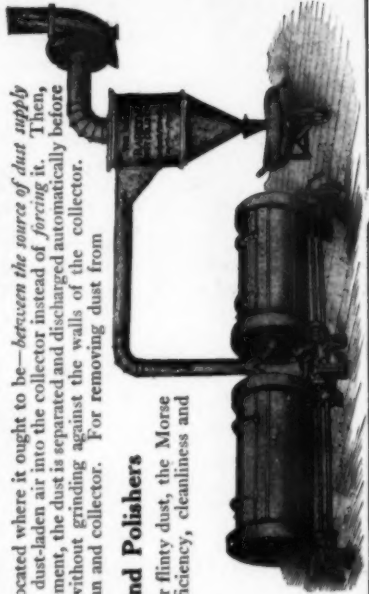
THE COLLECTOR is located where it ought to be—*between the source of dust supply and the fan*, thus *drawing* the dust-laden air into the collector instead of *forcing* it. Then, by a simple mechanical arrangement, the dust is separated and discharged automatically before the air reaches the fan, and without grinding against the walls of the collector. This insures long life to both fan and collector. For removing dust from

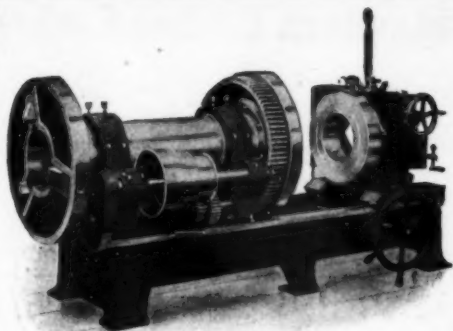
Emery Wheels and Polishers

and other raisers of metallic or flinty dust, the Morse "Rarefied" is unequalled in efficiency, cleanliness and low cost of up-keep.

*Our Booklet tells the whole story.
It's free*

The Knickerbocker Co.,
Jackson, Mich.





The Principle of Buying Power Pipe Machines

is the same as that of selecting a pair of shoes. You want to go where they have a big variety of reliable goods, so that you may pick out something that just fits and will give satisfactory service.

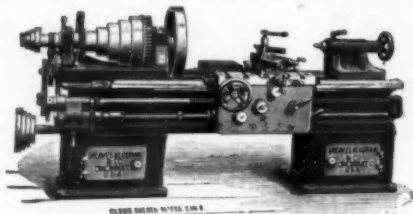
Peerless, P. D. Q. C. and Duplex

Pipe Threading and Cutting-Off Machines are made in 17 styles and sizes, for $\frac{1}{4}$ in. to 18 in. pipe, belt or motor drive. You will find among them just the thing to fit your particular requirements, with the assurance that it is a thoroughly efficient, durable and economical tool.

*Write us your requirements and let us
recommend a machine to fit them.*

Bignall & Keeler Mfg. Co.
Edwardsville, Ill.

Standard Engine Lathes



Simple Accurate Powerful Convenient

Furnished with either standard cone or with 3-step cone double-back-geared, **carrying a wide belt**, with 18 spindle speeds and wide feed range.

GREAVES, KLUSMAN & CO.
Cincinnati, Ohio, U. S. A.



HIGH DUTY
ROCKFORD
PUNCH PRESSES

POINTS THAT COUNT

Straight Line Frame with plenty of metal distributed where it will do the most good.

Large Shaft to stand the heavy strains put upon it.

Large Bearing area to insure long service.

Other advantages sent on request

Rockford Iron Works
Rockford, Illinois

Don't Start a Small Factory

Until You Consider it from Every Angle

If you intend to build and market a new machine, first consider these two basic principles of the manufacturing business:

1st, No manufacturing enterprise is larger than its factory.

2nd, Given an unlimited factory output, the size of the business is limited only by the sales.

With a Small Factory

your business is limited to the output of that factory, to say nothing of the expense, annoyances and delays of fitting out a new plant, and the high cost of manufacturing with an incomplete equipment—a cost that makes heavy inroads into the profits.

Let Us Be Your Factory

and you can at once put your time, energy and capital into building up a strong selling organization, with the knowledge that you have behind you a factory that can deliver the goods—a factory with the equipment, organization and experience to make good machines at rock-bottom cost, in any desired quantity.

Get in touch with us, any way.

We can't hurt you; we may help you.

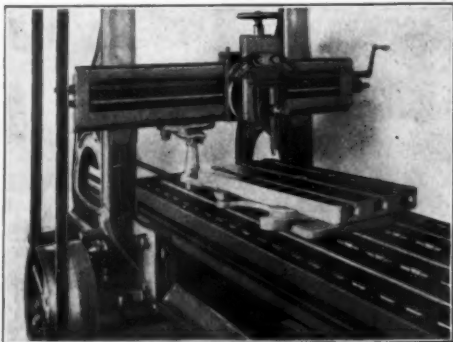
C. H. Cowdrey Machine Wks.
Fitchburg, Mass.

**Manufacturers of Machinery on Contract; Specialists
in Cost and Time Saving.**

Use Portable Tools

And Save Time, Money and Labor

Move the tool to the job and make your repairs in the time you would ordinarily spend disconnecting and moving the defective parts.



Radius Planer Attachment

For planing curves of any radius, and perfectly parallel curves, with an ordinary planer. This simple device does absolutely accurate work on all kinds of links, blocks and circular work. A scale for setting to any radii furnished when desired.

Our comprehensive line of portable tools includes a big variety of boring bars, for re boring engine, pump, air compressor and other cylinders, Corliss valve seats, etc., also portable millers, facing arms, rotary valve-seat planers, circular planer tool for driving boxes, machines for facing domes, cylinder flanges, truing eccentrics, bending pipe, etc.

Our complete catalog is yours for the asking.

H. B. Underwood & Company
1022 Buttonwood St., Philadelphia, Pa.

Second-Hand Machinery.

Lists of second-hand machinery, either for sale or wanted, will be published under this heading at the rate of **40 cents a line**, across the page, each issue, with a minimum charge of **\$4.00**. Sub-headings are counted as one line, but the name and address of advertiser are not included in the space charged for. Prices and full descriptions of the machines listed will be furnished by the parties offering them for sale. If you do not find what you require, use the slip inclosed with each book to make known your wants to the publisher.

FOR SALE BY

Syracuse Supply Co., - - - - **Syracuse, N. Y.**

PUMPS.

Two 17x12x15 Worthington duplex outside center packed plunger pumps, brass fitted. Weight, 10,000 lbs. each. Good condition.

FOR SALE BY

E. O. Partridge, 2047 W. Lake St., - - **Chicago, Ill.**

GAS ENGINE.

10 h. p. Backus gas engine, fitted for either gas or gasoline. Has been rebores, and is as good as new. A big bargain for somebody.

FOR SALE BY

The Berger Manufacturing Co., - - **Canton, Ohio**

ENGINE.

One Ball and Wood Upright Cross Compound Engine, Corliss valve and automatic governor, 20x34x24 in., direct connected to General Electric 250 volts, 300 k. w., d. c. generator. Engine now in daily use and fairly good condition. Installing larger units cause of offering for sale. Must be sold quick to make room.

FOR SALE BY

The Flanders Manufacturing Co., - - **Pontiac, Mich.**

TRAVELLING CRANE.

One 3-ton double motor travelling crane. All controls at one end. 220 volt, direct current, 2 h. p. General Electric motor with starting box for travelling. One 220 volt, direct current, 4 h. p. General Electric motor with starting box for hoisting. Span of crane 19 ft. 11 in. This is a new crane built by Maris Brothers, Philadelphia, Pa., and has never been used. Write for further information.

FOR SALE BY

Baker Brothers, - - - - **Toledo, Ohio**

GENERATORS, 110 VOLTS, D. C.

65 k. w. Triumph, 525 r. p. m. \$450. | 60 k. w. Northern, 800 r. p. m. \$400.

MOTORS, 110 VOLTS, D. C.

50 h. p. Lundell, 625 r. p. m. \$300. | 40 h. p. Colburn, 650 r. p. m. \$80.

10 h. p. Colburn, 1,700 r. p. m. 75. | 7½ h. p. Colburn, 1,700 r. p. m. 50.

20 h. p. Colburn, 1,000 r. p. m. 100.

MISCELLANEOUS.

Boilers, return tubular, 60 in. x 16 ft., 100 lbs., (2) each \$ 350.

Engine, 12x10 Ball, 80 h. p. 300.

Feed water heater, closed, 200 h. p. Otis. 95.

Gas engine, 1 cylinder, horizontal, 40 h. p. S. M. Jones. 400.

Gas engine, 2 cylinder, vertical, 80 h. p. Rathbun Jones. 1,600.

Lathes, 16 in. x 6 ft. F. E. Reed, plain rest, (2). 175.

SECOND-HAND MACHINERY

FOR SALE BY

J. J. McCabe,

30 Church St., New York City.

VERTICAL BORING AND TURNING MILLS.

- 10 ft. Niles-Bement-Pond, 2 heads, fitted up complete with Westinghouse motors, still in operation.
- 10 ft. Niles-Bement-Pond, 2 heads, thread cutting attachment, belt driven, still in operation.
- 7 ft. Bement, single head.
- 4½ ft. Colburn, double head.
- 3½ ft. King, double head, complete, motor driven.
- 3½ ft. Bullard, turret head.
- 3 ft. Niles, double head.
- 3 ft. Bullard, single head.

HOR. FLOOR BORING, DRILLING & TAPPING MACHINE
Niles (Ridgway), 3 in bar, 18 in. feed, A-1 condition, double column, heavy base plate, 16x8 ft.

HOR. BORING AND DRILLING MACHINES.

- 2½ in. bar, Bement, outside support.
- 2½ in. bar, Bement, outside support.

TURRET LATHES.

- 24 in. Gisholt, 4½ in. holes, with taper attachment, 2 carriages.
- 26 in. American, Gisholt type, chucks and tools.
- 32 in. American, Gisholt type, chucks and tools.
- 2x24 in. Warner & Swasey, hollow hexagon, with tools.

DRILLS, RADIAL.

- 7 ft. arm, Bement, standard, heavy pattern.
- 6 ft. arm, Niles Tool Works, outer support and table.
- 5½ ft. arm, Baush, heavy, weight 14,000 lbs., with table.
- 5 ft. arm, Prentice Bros., heavy, with table.
- 4 ft. arm, Prentice Bros., gear speed box, with table.
- 4 ft. arm, Niles Tool Works, half-universal, with table.
- 2½ ft. arm, Fosdick Co., standard, with table.

DRILL, MULTIPLE.

- 8 spindle, Western Co., capacity 1½ in. holes.

LATHE, DOUBLE SPINDLE.

- 26-44 in. swing, 12 ft. bed, McCabe, complete.

LATHES, TRIPLE GEARED.

- | | |
|--|---------------------------------|
| 102 in. x30 ft., Niles-Bement-Pond heavy, cost new \$12,000. | 54x21 Putnam, heavy. |
| 90x18 Fitchburg, heavy. | 52x28 Fitchburg, heavy. |
| 72x21 Putnam, heavy. | 50x32 Bement, heavy. |
| 64x36 Bement, heavy. | 48x24 Fitchburg, blocks 66 in. |
| | 42x18 Johnson, separate blocks. |

LATHES, BACK GEARED.

- | | |
|----------------------------|--------------------------|
| 38x16 Putnam, heavy. | 26x12 Blaisdell. |
| 36x26 Fay & Scott. | 24x12 Harrington, heavy. |
| 36x20 American Tool Works. | 20x10 Standard. |
| 30x14 Bradford. | 18x8 Bradford. |

PLANERS, SPIRAL GEARED.

- | | |
|----------------------------|----------------------------|
| 72x72x26 Sellers, 4 heads. | 48x48x7½ Sellers, 1 head. |
| 54x54x16 Sellers, 4 heads. | 36x36x26 Sellers, 2 heads. |

PLANERS, SPUR GEARED.

- | | |
|--------------------------|---------------------------|
| 42x42x18 Miles, 2 heads. | 36x36x10 Powell, 2 heads. |
| 42x42x14 Pond, 2 heads. | 36x36x8 Bement, 2 heads. |
| 38x38x10 Betts, 2 heads. | 36x36x8 Pond, 1 head. |
| 36x36x12 Gray, 2 heads. | 32x32x8 Pond, 2 heads. |
| 36x36x12 Niles, 3 heads. | 30x30x8 Sellers, 1 head. |

SLAB MILLERS, PLANNER TYPE.

- 22 in. x5 ft. Ingersoll.
- 24 in. x6 ft. Bement.

Outfit your shop from shop outfits we lately purchased. Largest assortment of machine tools—Lathes, Planers, Drills, Shapers, Milling Machines, Turret Lathes, Upright Drills, Boring Mills, Slotters, Hammers, Bolt and Pipe Machines, Punches, Shears, etc.

SECOND-HAND MACHINERY.

J. J. McCabe—Continued.

Also complete boiler shop outfit.

PUNCH AND SHEARS.

- | | |
|------------------------------------|------------------------------------|
| 38 in. throat, single, Boston. | 15 in. throat, double, Hilles & J. |
| 27 in. throat, single, Hilles & J. | 9 in. throat, single, Hilles & J. |
| 24 in. throat, single, Hilles & J. | 8 in. throat, double, Long & A. |
| 19 in. throat, single, Long & A. | |

HORIZONTAL FLANGE PUNCH.

Long & Allstatter horizontal flange punch.

BENDING ROLLS.

- 10 ft. drop-end housing, heavy, weight 20,000 lbs.
8 ft. Hilles & Jones, drop-end housing, heavy.
6 ft. Hilles & Jones, solid housing, heavy.

HYDRAULIC RIVETING OUTFIT.

6 ft. gap, Bement, hydraulic riveting outfit.

FOR SALE BY

The Chicago House Wrecking Co., W. 35th and Iron Sts., Chicago.

NEW AND USED MACHINERY.

- | | |
|--|---|
| Engine, 16x42 Bates g. f. Corliss. | Pipe threading machine, 1½ to 6 in., Jarecki. |
| Engine, 22x48 Allis h. d. Corliss. | Pipe threading machine, 2 to 12 in., Jarecki. |
| Gasoline engine, 25 h.p. St. Marys (2). | Radial drill, 4½ ft. arm, Gang. |
| Gasoline engine, 44 h. p. Fairbanks. | Road roller, 14 ton Kelley. |
| Hoist, d. d., 12x15 Lidgerwood. | Tanks, steel pressure, 54 in. x 22 ft. (4). |
| Jaw crusher, 9x15. | Tanks, steel pressure, 60 in. x 22 ft. (2). |
| Pipe threading machines, ½ to 2 in., Jarecki, (2). | |

STEEL TANKS.

- | | |
|----------------------------|-----------------------------|
| 1000 gallon capacity (12). | 5000 gallon capacity (37). |
| 1500 gallon capacity (22). | 4500 gallon capacity (42). |
| 2500 gallon capacity (30). | 6000 gallon capacity (150). |
- Send for 1000 p. catalog No. 889. Free on request. 40 'phones, all Yards 1900.

FOR SALE BY

J. W. Wright & Co., 2nd and Morgan Sts., St. Louis, Mo.

LATHES.

- | | |
|--------------------------------|-------------------------------------|
| 11x 5 Rockford, compound rest. | 18x10 Bradford, compound rest. |
| 13x 5 plain turret. | 19x 9 Lodge & Davis, c. r. & taper. |
| 16x 8 Hendey, compound rest. | 20x12 Gray, compound rest. |
| 16x 6 L. Blond, compound rest. | 24x12 Fitchburg, compound rest. |
| 16x 8 Bradford, plain rest. | 42x15, compound rest. |
| 18x 8 Barker, compound rest. | |

PLANERS.

- | | |
|-----------------------------------|---|
| 15x15x36 in. New Haven. | 30x30 in. x 7 ft. New Haven. |
| 24x24 in. x6 ft. Whitcomb. | 36x36 in. x12 ft. Gray, shop worn only. |
| 24x24 in. x 8 ft. Pease, 2 heads. | 14 in. Steptoe, crank. |

PRESSES.

- | | |
|-------------------------|---------------------------|
| No. 3 Swaine, foot (7). | No. 35 Swaine, power (2). |
| No. 27 Swaine, power. | Small presses, power (2). |

SCREW MACHINES.

- | | |
|--|--|
| No. 54 Bardons & Oliver, 2½ in. capacity, A-1. | |
| 2x24 Jones & Lamson. | |

DRILLS.

- | | |
|------------------------|-------------------|
| ¾ ft. Fosdick, radial. | 14 in. sensitive. |
|------------------------|-------------------|

MOTORS.

- | | |
|---|------------------|
| 5 h. p. Ft. Wayne, a. c., 220v., 60c., 3ph. | 50 light dynamo. |
| 5 h. p. Fairbanks, a. c., 220v., 60c., 3ph. | |

MISCELLANEOUS.

- | | |
|---------------------------------------|------------------------------|
| Blower, No. 2 Roots. | Pipe machine, 2 in. Jarecki. |
| Bolt cutter, double, 1½ in. National. | Pulley borer, 36 in. Streit. |
| Cock grinder. | Pulley lathe, 30 in. Henley. |
| Cutter grinder, Cincinnati. | Tapper, ½ in. W. & R. |
| Hammer, power, No. 4 Perfect. | Wheel press, 500 ton. |
| Keyseater, No. 2 Davis. | |

SECOND-HAND MACHINERY

FOR SALE BY

Marshall & Huschart Machinery Company,
17 S. Jefferson St., Chicago. 334 N. Capitol Ave., Indianapolis.
915 Chemical Bldg., St. Louis. 418 Railway Exc., Milwaukee.

BOLT CUTTERS.

- 1 in. National, single head, with self-opening die head.
 1½ in. Adams, single head, with self-opening die head.
 2 in. Acme, single head, with self-opening die head.

BORING MILLS.

- 30 in. Warner & Swasey turret.
 14x20 ft. Niles extension, with two regular heads and extension head.
 24 in. Binsse horizontal, with 36 in. table.
 No. 1 Barnes horizontal drilling, boring and tapping.
 No. 4 Betts cylinder boring machine, 3 in. bar, 6 ft. table.

DRILLS.

- 2 spindle Henry & Wright high sp., ball bearing sensitive..
 3 spindle Redington, sensitive.
 14 in. B. F. Barnes, plain lever.
 20 in. B. F. Barnes, wheel and lev. fd.
 2 spindle style "F." Baker Bros., heavy pattern.
 30 in. Gang plain radial, cone drive, swivel table.
 No. "0" Bickford radial, cone drive, swinging table, b. g., and tapping attach.
 3 ft. Dreses, cone drive, plain radial, b. g., geared feed and tapping attach.
 5 ft. Fosdick plain radial.

GEAR CUTTERS.

- No. 1 D. E. Whiton automatic, for spurs and bevel.
 40 in. x 9 in. G. & E., Victoria type.

GRINDERS.

- No. 3 Brown & Sharpe, universal.
 Oesterlein, universal.
 20 in. Ransom, water.

HAMMERS.

- 50 lb. Williams & White, spring.
 150 lb. Williams & White, rope drop.

KEYSEATERS.

- No. 2 Baker Bros., complete, regular equipment.
 20 in. stroke Morton keyway cutter.

LATHES.

- 11x4 Davis, h. s., p. r. screw cutting.
 14x6 Bradford, screw cut'g, reg. eqpt.
 16x6 Bradford, screw cut'g, reg. eqpt.
 18x8 Bradford, screw cut'g, reg. eqpt.
 18x10 Hamilton, c. r., h. s. with turret on shears.

TURRET LATHES.

- 20x6 Hartford, f. b. g., p. f. to t.
 2x24 Jones & Lamson, flat turret.
 26 in. Gisholt.

MILLING MACHINES.

- No. 6 Whitney, hand.
 No. 2 Cincinnati, plain, cone type.
 No. 2 Eynon, plain, b. g., belt feed.

PIPE MACHINES.

- 2 in. Saunders, with dies.
 3 in. Saunders, with dies.

PLANERS.

- 22 in. x 22 in. x 5 ft. Whitcomb Blaisdell (new, at reduced price.)
 26 in. x 26 in. x 6 ft. Whitcomb Blaisdell (new, at reduced price.)
 60 in. x 72 in. x 16 ft. Fitchburg, 1 head.

SCREW MACHINES.

- 2-No. 1 Cleveland automatic.
 ½ in. Cleveland automatic.

SHAPERS.

- 12 in. Rockford sgl. g. crank, compt.
 13 in. Kelly plain crank, compt.

- 23 in. B. F. Barnes, b. g. and p. f.
 25 in. Barnes, w.&l. f., p.f., b. g., a. s.
 26 in. B. F. Barnes, sl. hd., complete.
 26 in. Mechanics, sl. hd., complete.
 28 in. B. F. Barnes, sl. hd., complete.

- No. 50 Saxon, cylinder.
 No. 4 Landis universal, complete with reg. eqpt., good as new.

- 200 lb. Bradley, strap.
 800 lb. Ferris & M., stm., sgl. frame.

- 25x20 Putnam, c. r., p. c. f., s. & p. r., screw cutting.
 29x14 New Haven, c. r., hollow spdl.
 36-42x18 LeBlond, c. r., complete regular equipment.
 38x19 New Haven, c. r., reg. eqpt.

- 28 in. Milwaukee.
 42 in. New Haven, with two-jaw chuck.

- No. 3 Cincinnati, plain, cone type.
 No. 4 Cincinnati, pl., c. t., all p. f.
 15 in. x 8 ft. Keystone, slab.

- 2½ in. to 6 in. Curtis, combined hand and power.

- Pratt & Whitney automatic.
 No. 3 National-Acme auto., ½ in. cap.

- 16 in. Blount friction geared, compt.

SECOND-HAND MACHINERY

FOR SALE BY

Joseph T. Ryerson & Son, 16th and Rockwell Sts., Chicago
POWER PUNCHES.

Item.

- 287 Cleveland 90 in. multiple punch, 12 in. throat; capacity thirty 13-16 in. holes in $\frac{1}{2}$ in.; motor drive.
 498 Royersford No. 2 double end punch and shear, 7 $\frac{1}{2}$ in. throat; punch $\frac{3}{4}$ x $\frac{1}{2}$ in.; shear 6x $\frac{1}{2}$ in.

POWER SHEARS.

- 291 Cleveland 10 ft. gate shear, 36 in. gap, capacity 3-16 in.; motor drive.
 59 H. Pels & Co. Johns beam shear; cap. 12 in. 35-lb. beams; belt drive.
 504 H. Pels & Co. Johns T 40 beam shear; capacity 15 in., 60-lb. beams.
 247 No. 2 Lennox rotary bevel shear, for $\frac{1}{2}$ in. plate; belt drive.
 292 Special stroke type bevel shear; capacity 1 in. plate.
 564 No. 34 Wangler rotary bevel shears for $\frac{1}{2}$ in. plate, belt drive.

HYDRAULIC MACHINERY.

- | | |
|---|--|
| 263 Morgan 10 $\frac{1}{2}$ ft. riveter, 100 tons. | 273 Bement-Miles 10 ton riveter crane. |
| 267 Hori. punch, 12 in.; cap. 1x $\frac{1}{2}$ in. | 272 Morgan 10 ton riveter crane. |
| 268 Morgan 48 in. punch, cap. 2x1 in. | |
| 269 Morgan 45 in. pch., cap. 2 $\frac{1}{2}$ x1 in. | |

PLANERS.

- | | |
|---|--|
| 158 Pond, 26x26x6, heavy pattern, 1 head; belt drive. | 163 Sellers, 36x36x7, 1 head; belt d. |
| 162 Pond, 32x32x8, 2 heads, belt d. | 166 Bement, 36x36x7, 2 hds.; belt d. |
| 215 Gray, 36x36x10, 2 heads; arranged for motor. | 167 Sellers, 42x42x8 $\frac{1}{2}$, 2 hds.; belt d. |
| | 169 Sellers, 42x42x8 $\frac{1}{2}$, 2 hds.; belt d. |
| | 137 Sellers, 48x48x8 $\frac{1}{2}$, 2 hds.; belt d. |

LATHES.

- | | |
|---|--|
| 398 Bradford, 18x8 p. r.; p. c. f., hollow spindle. | 234 Hendey, 18x10, q. c. gear, hol. sp.; com. rest; p. c. f. |
| 135 Reed 16x6, hol. sp., p. c. f. | 556 Lodge & Shipley 18x10, q. c. g. |
| 535 Gray 16x10, hol. sp., p. c. f. | 482 Muller 24x10 com. rest., hol. sp. |

DRILLS.

- 195 Barr, 3 spindle, sensitive.
 558 Cincinnati 24 in. adj. head, b. g., power feed.
 199 Sigourney, 4 spindle, sensitive.
 476 Lodge & Davis, 30 in. sliding head; back geared; power feed.

SHAPERS.

- | | |
|------------------------------|-----------------------------------|
| 513 Flather 14 in., crank. | 514 Steptoe, 14 in. crank. |
| 511 Hendey 15 in., friction. | 512 Smith & Mills, 15 in. crank. |
| 460 Flather 18 in., crank. | 557 J. G. Blunt 16 in., friction. |

PNEUMATIC RIVETERS.

- 290 Allen type toggle; 48 in. reach; 9 in. gap; capacity $\frac{1}{2}$ in. rivets.
 493 Allen jaw riveter; 17 $\frac{1}{2}$ in. reach; 15 in. gap; capacity 1 in. rivets.
 498 Allen compression lever; 9 in. reach; 14 in. gap; capacity $\frac{1}{2}$ in. rivets.
 491 Hanna patented lever; 25 in. reach; 15 in. gap; capacity $\frac{1}{2}$ in. rivets.

COMPRESSORS.

- | | |
|----------------------------------|------------------------------------|
| 579 Franklin 6x6, belted. | 563 Bury 16x10, belted, with tank. |
| 562 Ingersoll-Rand 8x10, belted. | |

MISCELLANEOUS.

- 238 Bending and straightening machine, Cosgrove, capacity 15 in. beams.
 213 Boring and drilling machine, horizontal, 4x27x60 in., Beaman & Smith.
 376 Concrete mixer; capacity $\frac{1}{2}$ cu. yd.; complete with engine and boiler.
 240 Cornice brake, 8 ft. Geo. A. Ohl, capacity No. 18 gauge.
 201 Miller, plain, No. 9 Garvin, table 7 $\frac{1}{2}$ x30 in., back geared.
 313 Pipe cutter, No. 5 $\frac{1}{2}$ Merrill, capacity 2 in. pipe, belt drive.
 486 Planer, plain rotary, 26 in. head, No. 1 Newton, arranged for motor.
 208 Profiling machine, No. 2 Pratt & Whitney.
 541 Screw machine, 1 in. Cleveland automatic.
 538 Screw machine, 2 in. Cleveland automatic.

SECOND-HAND MACHINERY

FOR SALE BY

International Watch Co.,

Jersey City, N. J.

List from E. Bunsal, Treas., 312-315 Broadway, New York.

Blower, No. 6 Stillwell.

Buffing plant.

Drill presses, bench.

Lathes—pinion, staff, buffing, case, bench, spring, and watchmakers' lathes.

Spring winding machine.

Stud and pin machine, Hartford.

Wheel and gear cutters, Sloan & Chase.

Wigwags, and other machinery.

Prices ridiculously low.

FOR SALE BY

The Motch & Merryweather Machinery Company,

707-715 Lakeside Av., N. W.,

Cleveland, Ohio

Branches: Detroit, Cincinnati, Pittsburg.

Refitted Machine Tools:

BORING MILLS.

30 in. Bullard, plain table (2).

24 in. Bullard, vertical turret lathe.

BROACHING MACHINES.

No. 1 vertical Standard.

No. 3 Lapointe.

DRILL PRESSES—UPRIGHT.

20 in. Barnes.

28 in. Rockford, good as new.

32 in. Barnes.

Baker, high speed.

26 in. New Haven, sliding head, (2).

Dallett, portable (2.)

36 in. New Haven, sliding head.

6 spindle, Quint, turret.

RADIAL DRILLS.

4 ft. Box, half universal.

4 ft. Fostick.

5 ft. Pond, heavy.

5 ft. Fostick.

36 in. Fostick.

GEAR CUTTERS.

33x9 in. x 4 p. Gould & Eberhardt.

20 in. Rhenania gear hobber.

48x10 in. x 3 p. Gould & Eberhardt.

GRINDERS.

No. 1 Landis internal.

No. 2 Leland & Faulconer, wet tool.

No. 3 Landis universal, (2).

"A" Yankee drill grinder.

No. 24 Landis plain, swivel head.

No. 11 Brown & Sharpe, plain (2).

LATHES—ENGINE.

12x5 Young, comp. r., good as new.

20x8 Flatther, 4 step cone, belt feed,

13x5 Willard, compound rest.

compound rest.

14x6 Hendey, plain rest, taper att.

22x15 Pond, compound rest.

19x8 Greaves & K., good as new.

MILLING MACHINES.

No. 3½ Garvin, plain.

No. 2 Osterlein, plain.

No. 1 Eynon, back geared.

No. 3 Owen, plain.

PLANERS.

10 in. Busch, crank, swivel vise.

36x36x10 Cincinnati, 2 heads.

24x24x6 Ohio, 1 head.

PRESSES.

No. 4 Bliss punch press.

Inclinable (2).

SHAPERS.

16 in. Gould & Eberhardt, crank.

24 in. Ohio, shifting belt.

20 in. Gould & Eberhardt, g. as n.

24 in. Flather, good as new.

15 in. Hendey, friction.

32 in. Gould & Eberhardt.

TURRET LATHES.

2x24 Jones & Lamson, latest type.

24 in. Lodge & Shipley screw mach.

7x14 Potter & Johnston.

28 in. Gisholt, rapid traverse.

16x5 Mueller, plain rest, turret on

44 in. Grant chucking lathe.

shear and chuck.

No. 1 Krauth & Benninghoffen.

MISCELLANEOUS.

Belt lacer, 17 in. Peerless.

Pneumatic gap riveter, 10x37 Ch'go.

Keyseaters, No. 2 Baker (2).

Riveter, ½ in. Schuster.

SECOND-HAND MACHINERY

FOR SALE BY

Prentiss Tool & Supply Co., New York, Boston, Buffalo, Syracuse.

LATHES.

9x44 Star, plain rest, p. c. f.
12x5 Champion, comp. rest, p. c. f.
14x6 Hendey, plain rest.
14x8 LeBlonde, chuck.
15x6 Porter, compound rest, p. c. f.
17x6 Prentice Bros., comp. rest.
18x10 Perkins, compound rest, power cross feed.
20x8 Fay & Scott, compound rest, power cross feed.
20x10 Bullard, compound rest.
20x8 McMahon, compound rest.
26x12 Fitchburg, compound rest.
26x12 Fish, compound rest.
26x14 Perkins, compound rest, power cross feed.
27x12 Pratt & Whitney, plain rest.
27x16 Fay & Scott, compound rest, power cross feed.
28x10 Gleason, compound rest.

32x17 Bement, triple geared, compound rest, power cross feed.
36x16 Reed, compound rest, power cross feed.
32x17 Bement triple geared, compound rest.
37x18 Sellers, compound rest, power cross feed.
38x20 Fay & Scott, compound rest, power cross feed.
40x18 Newark, triple geared.
46x38 Fitchburg, triple geared.
64x20 compound rest, power cross feed.
103x35 Bement, triple geared.
16 in. x10 ft. automatic threading lathe.
60 in. Stevens pulley lathe.
7x32 Sloan & Chase bench lathe.
20x8 Fay & Scott, pattern makers.

MILLERS.

No. 1 Hendey, plain, back geared.
No. 1 Cincinnati, universal.
No. 2 P. & W., Lincoln pattern.
No. 2 Garvin, hand.
No. 3 Cincinnati, plain.
No. 4 Garvin, manufacturers type.

No. 4 Burke, bench.
No. 1 Brown & Sharpe, plain.
No. 12 Brown & Sharpe, plain.
No. 24 Brown & Sharpe, plain.
No. 5 Brown & Sharpe, plain.
28x20x6 P. & W., slab miller.

DRILLS.

Foot-Burt, high speed.
Baker Bros. high speed.
24 in. Cincinnati, sliding head.
38 in. New Haven, sliding head.

60 in. Bickford, stationary head.
54 ft. Niles, universal radial.
30 in. Gang radial, back gears.
10 spindle Gardam, adjustable.

SHAPERS.

15 in. Hendey, friction.
18 in. Putnam, friction.

26 in. Lodge & Davis, shifting belt.
28 in. Cincinnati, geared.

GEAR CUTTERS.

12 in. Gould & Eberhardt, hand.
30 in. Gould & Eberhardt, auto.

60 in. Gould & Eberhardt, spur.

SCREW MACHINES.

4 in. No. 52 National-Acme, auto.
1 in. Pratt & Whitney, automatic.
2x24 Jones & Lamson.

4 in. Pratt & Whitney.
24 in. Pratt & Whitney, automatic.
3x36 Jones & Lamson.

PLANERS.

24x24x7 Putnam.
30x30x6 Pond, 1 head.
36x36x10 L. W. Pond, 2 heads.
36x36x10 Detrick & Harvey, open side.

33x33x8 Betts, 1 head.
48x42x8 Farrell, 1 head.
48x48x15 Pond, three heads.
15 ft. plate planer.

HAMMERS.

50 lb. Bradley, compact.

600 lb. Erie, steam.

PIPE MACHINES.

2 in. Bignall & Keeler.

3 in. Jarecki.

MISCELLANEOUS.

Boring mill, 16 ft. Pond.
Cold saw, 24 in. Newton.
Engine, gas, 8 h. p., Fairbanks.
Engine, steam, 8x10 in. Ide.
Grinder, No. 11 Brown & Sharpe, plain.

Grinder, disc, 18 in. No. 4 Besly.
Pipe machine, 6 in. Merrill.
Profiler, 1 spindle, Garvin.
Slotter, 13 in. Bement.
Slotter, 16 in. Bement, crank.

SECOND-HAND MACHINERY

FOR SALE BY

The H. A. Stocker Machinery Co., 566-72 W. Randolph St., Chicago
610 Merrill Building, Milwaukee, Wis.

Something in this List ought to interest you. Let us know what it is.

LATHES.

10x54 Davis (new, but reduced price).
 12x6 Davis (new, but reduced price).
 14x6 Hamilton, compound rest.
 14x6 LeBlond, good order.
 15x6 Von Wyck, c. r. and chuck.
 15x5 Star, chuck fitted.
 16x6 Bradford compound rest.
 16x6 Davis c. r. (new, reduced price.)
 16x6 Davis c. r. and tap., reduced pr.
 16x8 Bradford g. c. g., comp., rest, taperatt., draw in spdl. and collets, chuck fitted, good as new.
 17x6 Economic, compound rest.

18x8 Economic, compound rest.
 18x8 Lodge & Davis, c. r. and taper.
 18x8 Springfield, c. r. and taper.
 20x12 Greaves & Klusman, comp. rest, turret on shears, chuck fitted.
 21x10 Bradford, comp. rest, taper attachment, fine order.
 24x10 Porter, compound rest.
 26x16 Putnam, 3 in. raising blocks.
 32x16 Davis, double back gears (new, reduced in price).
 48x20 New Haven, tr. gd. (low price).

SHAPERS.

12 in. Walcott, crank, good order.
 16 in. Gould & Eberhardt, b. g.
 16 in. Queen City, new, reduced pr.

20 in. Cincinnati, back geared.
 22 in. Walcott, triple geared.
 24 in. Hendy, triple geared.

PLANERS.

72x72x14 Niles, 4 hds., A-1 condition.
 48x48x20 Belmer, 4 heads.
 44x44x12 Pond, 2 heads.
 36x36x12 Gray, 2 heads.
 36x36x14 Belmer, 2 heads.
 36x36x10 Gray, 2 heads.
 32x32x10 Gray, 2 heads.
 32x32x12 Ohio, 2 heads.

30x30x12 Belmer, 2 heads.
 30x30x10 Flatthor, 3 heads.
 26x26x8 Whitcomb (new, reduced pr.)
 20x20x5 Hendy, single head.
 40x38x14 Putnam, old style, low pr.
 36x30x12 Sellers, old style, low price.
 22x22x4 New Haven, low price.

MILLING MACHINES.

No. 6 Whitney, hand.
 No. 10 Pratt & Whitney, hand.
 No. 3½ Waltham, bench.
 No. 3 Cincinnati, plain.
 No. 13 Garvin, plain.
 No. 0 LeBlond, plain back geared.
 No. 5 Garvin, plain back geared.

No. 1 Cincinnati, plain head, univ.
 No. 3 Cincinnati, universal.
 No. 1 Kempsmith, b. g. universal.
 No. 2 P. & W., Lincoln type.
 No. 2 Thurston, die miller.
 No. 4 Becker, univ. (new, low pr.)

UPRIGHT AND RADIAL DRILLS.

5 ft. arm Western, universal.
 4 ft. Cincinnati, universal.
 4 ft. Bickford, plain, gear box.
 4 ft. Bickford, plain, gear box.
 4 ft. Bickford, plain cone.
 4 ft. Fosdick, National, plain cone.
 28 in. New H. sl. hd., bk. gr., p. fd.
 35 in. Blaisdel, sl. hd., bk. gr., p. fd.

34 in. Barnes, sl. hd., bk. gr., p. fd.
 28 in. Snyder, sl. hd., bk. gr., p. fd.
 25 in. Prentice Bros., sl. hd., bk. gr., p. fd.
 26 in. Hoefler, stationary hd., bk. gr., p. fd.
 18-20 in. and smaller.

SENSITIVE DRILLS.

1 to 6 spindles, various makes.

SCREW MACHINES.

No. 1 Garvin.
 No. 2 Pratt & Whitney.
 No. 2½ Pratt & Whitney.
 No. 51 National-Acme automatic.

No. 00 Brown & Sharpe automatic.
 1 in. Cleveland automatic.
 1 in. Cleveland automatic.
 2 in. Cleveland automatic.

TURRET LATHES.

Libby, geared head, fine condition.
 24x24 Jones & Lamson, set over hd.

20 in. Fay & Scott, universal.
 7 smaller sizes, various makes.

BORING MILLS—VERTICAL AND HORIZONTAL.

10 in. Niles, 2 heads.
 76 in. Betts, 2 heads.
 72-96 in. Betts, 2 heads.
 50 in. Colburn, 2 heads.
 38 in. Rogers, 2 heads.

34 in. Colburn, swivel turret.
 No. 2 Barrett cylinder borer.
 No. 1 Barrett, double spindle.
 42 in. Niles car wheel borer.

SECOND-HAND MACHINERY.

H. A. Stocker—Continued.

POWER PRESSES.

- | | |
|-------------------------------------|--|
| No. 20 Bliss, inclinable. | No. P2 American Can, 1½ in. stroke. |
| No. 37 Niagara, 1½ in. stroke. | No. 4 American Can, o. b. i., 2 in. s. |
| No. 36 Niagara, 1½ in. stroke. | No. 3 American Can, o. b. i., 2 in. s. |
| C82 Ferracute, armature notching. | No. 2 American Can, o. b. i., 2 in. s. |
| C94 Ferracute, armature notching. | No. 67 Consolidated, 8 in. stroke. |
| No. 81 Consolidated, 1½ in. stroke. | No. 73 Consolidated, geared. |
| No. P1 Ferracute, 1½ stroke. | No. 0 Blake & Johnson arch press. |

BEMENT SINGLE END PUNCH AND SHEARS,

- | | |
|------------------------------------|--------------------------------------|
| 42 in. throat, capacity 4x1½ in. | Cincinnati sgl. end punch and shear, |
| Humphrey sgl. end punch and shear, | 8 in. throat, capacity 4x1½ in. |
| 36 in. throat, capacity 1½x1 in. | |

MISCELLANEOUS.

- | | |
|--|-------------------------------------|
| Bolt cutter, 1½ in. Schlenker. | Hammer, helve, 40 lb. Bradley. |
| Bolt header, 4 in. | Hammer, helve, 60 lb. Bradley. |
| Centering machine, 4 in. Whiton. | Hammer, upright helve, 200 lb. |
| Cutting-off mche., 5 in. Hurlburt & R. | Hydraulic press, 40 ton. |
| Gear cutter, 26 in. Brown & S., auto. | Hydraulic press, 100 ton with pump. |
| Gear cutter, 30 in. Flather. | Pipe mche., 4 in. Bignall & Keeler. |
| Gear cutter, 34 in. Whiton, auto. | Pipe machine, 4 in. Stoevers. |
| Gear cutter, 50 in. Gould & E., auto. | |

FOR SALE BY

W. L. Perkins Jr. & Co., - 30 Church St., New York City, N. Y.

LATHES.

- | | |
|--|----------------------------------|
| 12x5 Prentiss, hol. sp., r. & f. rest. | 22x10 Harrington, compound rest. |
| 12x6 Reed, hol. spdl., r & f. rest. | 26x10 Pond, compound rest. |
| 14x6 Reed, hol. spdl., r & f. rest. | 28x15 Worcester, compound rest. |
| 16x8 Harrington, plain rest. | 30x17 Pond, compound rest. |
| 18x8 Reed, for stud work. | 30-40x15 Pond, compound rest. |
| 20x8 Pond, compound rest. | 34x8 Johnson, compound rest. |
| 29x10 Standard, compound rest. | |

PLANERS.

- | | |
|-----------------------------|--------------------------|
| 17x17x3 Bridgeport, 1 head. | 28x26x6 Putnam, 1 head. |
| 22x22x5 Bement, 1 head. | 30x26x7 Putnam, 1 head. |
| 24x24x6 Pease, 1 head. | 30x30x8 Sellers, 1 head. |

SHAPERS.

- | | |
|-----------------------------------|--------------------------------------|
| 10 in. Fitchburg, traveling head. | 15 in. Gould & E., crank, with vise. |
| 14 in. Fitchburg, traveling head. | 20 in. Gould & E., crank, with vise. |

TURRET LATHES.

- | | |
|---|--|
| 13x5 Bardons & Oliver, plain head. | 18x6 American brass lathe, set-over and swivel motion. |
| 24 in. Gisholt, 4½ in. hole, taper att. | |

UPRIGHT DRILLS.

- | | |
|------------------------------------|---------------------------------------|
| 30 in. Aurora, sliding head, b. g. | 36 in. Bement, sliding head, b. g. |
| 32 in. Pond, sliding head, b. g. | 50 in. Harrington, sliding hd., b. g. |

SLOTING MACHINES.

- | | |
|----------------------------|----------------------------------|
| 8 in. Bement, all feeds. | 24 in. Sellers, all feeds. |
| 12 in. Sellers, all feeds. | 20 in. locomotive frame slotter, |
| 18 in. Bement, all feeds. | Bement, all feeds. |

MISCELLANEOUS.

- Axle and centering machine, 10 in. Bement, good as new.
 Boring and drilling machine, horizontal, 2½ in. bar, Garvin.
 Bolt cutter, 1½ in. Acme, with dies, taps, etc.
 Broaching machine, 2½ in., complete, regular equipment.
 Cutting-off machine, 3 in. Pratt & Whitney, accelerated speed.
 Cylinder boring machine, 50 in. Niles.
 Engine, Corliss tandem compound, 14-26x48 in., Greene, band whl. 18 ft. x 26 in.
 Gear cutter, spur, 30 in. Gould & Eberhardt, automatic.
 Grinder, surface, 24x6½ in. Walker, automatic.
 Hammer, steam, single, 800 lb. Bement.
 Hammer, steam, double, 3,500 lb. Bement.
 Miller, Lincoln style, Garvin.
 Nut tapper, upright, 6 spindle, Acme.
 Pumps, Blake, Worthington, Dudley.

SECOND-HAND MACHINERY

FOR SALE BY

Western Machinery Co., 6th and Baymiller Sts., Cincinnati, Ohio.

LATHES.

14x6 Blaisdell, hollow spindle.	22x10 LeBlond, tur. on shears & chuck.
14x7 Putnam, hollow spindle.	22x9 New Haven, compound rest.
15x6 Jones & Lamson, h. s.	26x12 Perkins, compound rest.
17x8 Fitchburg, comp. rest.	26x18 Niles, comp. rest & taper.
18x10 Nicholson & Waterman, c. r.	44x16 Kidd Iron Works, triple gears.
20x8 LeBlond, turret on carriage.	47x20 Niles, triple gears.

BORING AND DRILLING MACHINERY.

7 ft. Niles vert. boring mill, 2 heads.	30 in. Bickford, slid. hd., b. g., p. fd.
7 ft. Callahan, 1 head, \$500.	20 in. Sibley, wheel and lever, (2.)
6 ft. Niles radial.	20 in. Sibley & Ware, plain.
36 in. Hamilton, upright, sliding head, back geared, power feed.	10 in. bench drills, with chuck, (3.)

PLANERS AND SHAPERS.

22x22x5 G. A. Gray.	26x26x8 Pratt & Whitney.
24x24x7 Pond, converted to slab miller.	26x26x8 G. A. Gray.
25x25x6 Sellers.	14 in. Steptoe, crank shaper.
	24 in. Barker bk. gd. crank shaper.

MISCELLANEOUS.

Air compressor, 6 in. x 8 ft. ver. duplex.	Ice machines, 17 ton (2).
Bolt cutter, 2 1/2 in. National.	Lathe, Fox-Monitor, 18x6 American, with chasing bar.
Chain blocks, 1/2 ton, 2 ton, & 3 ton.	Press, No. 53 Ferracute.
Hammer, steam, 250 lb. Bell.	Punch, power, Newbold, 16 in. throat, weight 6,000 lbs.
Hex. carriage tur. attch., LeBlond.	Screw machine, No. 1 P. & W.
Gas engines, 6, 10, & 20 h. p. (3.)	
Ice machine, 2 ton.	

And other miscellaneous machinery.

What metal working machines have you for sale or trade?

FOR SALE BY

The Osborne & Sexton Machinery Co., . . . Columbus, Ohio.

LATHES.

2x24 Jones & Lamson turret.	20x8 Hamilton, hol. spdl., com. rest.
13x8 Barnes, compound rest, h. s. (2).	20x10 Hamilton, hol. spdl., com. rest.
14x6 Hamilton, cp. rest, hol. sp. (3).	20x12 Hamilton, hol. spdl., com. rest.
14x6 Prentice, cp. rest, hol. sp.	24x10 LeBlond, turret on shears.
18x8 Hamilton, hol. spdl., com. rest.	27x12 special lathe.
18x8 Hamilton, q. c., h. s., c. r.	36x14 New Haven.
18x10 Hamilton, q. c., h. s., c. r.	36x18 New Haven.
18x10 Hamilton, hol. spdl., com. rest.	38x18 New Haven.
18x12 Hamilton, q. c., h. s., c. r.	

PLANERS.

30x24x6 Steptoe-McFarlan.	36x36x12 Cincinnati, 2 heads.
30x30x12 Bement-Doherty.	36x36x12 Sellers, 1 and 2 heads, (2).
32x32x10 Gray, 2 heads.	48x48x20 Belmar, 4 heads.
33x33x12 Cincinnati, 2 heads.	

BORING MILLS.

72 and 84 in. Sellers.	83 in. Johnson, single head.
84 in. Sellers, widened pattern.	7, 8 and 8 ft. Betts, 3 heads.

MISCELLANEOUS.

Air compressor, 100 ft. Bury.	Keyseater, No. 2 W. P. Davis.
Boring mches., cyl., 20 in. Barrett (2).	Nut tapper, 6 spindle, 2 in. Acme.
Boring mill, horiz., 1 1/2 in. B. & S.	Press, foot, Niagara, heavy.
Cock grinder, double.	Presses, foot, No. 1 Consol. (7).
Drill, 25 in. Kern, sliding head.	Presses, power, No. 0 Consol. (2).
Gas engines, 10, 15, 25 and 100 h. p.	Rolls, break and power, 8 ft.
Gas furnace, No. 2 Chicago.	Tapping mch., vertical, No. 4 Garvin.
Grinder, surface, No. 3 B. & S.	Tapping mches., Webster & P.. (2).
Hack saws, Nos. 1, 2 and 3.	Wheel press, hydraulic, 150 ton.
Hammer, 35 lb. Williams & White.	Shovel machinery, a complete outfit, also stove machinery, all practically new.
Hammer, steam, 1, 100 lb. Morgan.	
Hammers, 3,000 and 5,000 lb. Toledo.	

SECOND-HAND MACHINERY FOR SALE BY

The E. L. Easley Mchy Co., 555-557 Washington Blvd., Chicago, Ill.

A partial list of used machinery for quick delivery. We have a large stock of new machine tools not listed here. If you don't find here what you want, write us, giving sizes and detail. Our stock is changing constantly and we may have what you want. Special prices quoted this month on account of limited room.

DRILLS.

- 4 spdl. No. 3 Garvin, mult., table fd.
- 4 spindle Quint turret drill.
- 6 spdl. No. 3 Garvin, mult., table fd.
- 4 spindle 20 in. W. F. & J. Barnes gang drill, all spdls. p. f., 1 sp. b. g.
- 4 spindle Barnes Drill Co.'s all gd. gang drill, b. g. and p. f.
- 20 in. Barnes all geared, power feed.
- 23 in. Barnes back geared and p. f.
- 22 in. Bickford, sliding head.
- 25 in. Barnes sta'ry hd., b. g., and p. f.
- 18 in. Baker Bros. high speed drill presses, complete, (2.)
- 26 in. W. F. & J. Barnes, sliding head, drill complete; fine condition.
- 28 in. Hamilton, sl. hd., b. gd., p. f.
- 28 in. Moline, sliding head, upright.
- 28 in. Kern, s. hd., b. g. & p. f. nearly new.
- 3 ft. Hilbert, plain, radial, b. g. and tapping attachment.
- 5 ft. Western plain radial, tap, att.

ENGINE LATHES.

- 14x8 Lodge & Shipley, c. r. & taper.
- 16 in. x8 ft. Champion, standard eng. lathe, b. g., used 14 months.
- 14x7 Blaisdell, taper attachment.
- 15x6 Walcott, back geared, rebuilt.
- 16x6 Muller, hollow spindle, p. c. f.
- 16x6 American, c. r., late pattern.
- 16x8 Champion, c. r., 3 step cone, double b. g.
- 20x6 Flather, overhauled, fine cond.
- 20x12 New Haven eng. lathe; write for description.
- 30x14 Fifield, compound rest.
- 25-29x12 Harrington, gap, nearly new.
- 32x16 American, sgl. b. g., q. c. g., comp. r., heavy, and fine order.
- 42x16 Fifield tpl. gd., compound rest.

MISCELLANEOUS LATHES.

- No. 21 Garvin, plain head, Monitor, 13-16 in. hollow spindle.
- No. 2 12 in. Foster plain hd. Monitor.
- 14 in. Monitor, plain head, F. K.
- 13 in. Gisholt, standard turret, comp.
- 28 in. Gisholt, standard turret, comp.
- 30 in. x8 ft. P. & W., pl. hd. chucking lathe, 24 in. 4-j. chk., p. f. to t. s.
- Pearson b. g. hub machine, like turret lathe, 24 in. h. s.

MISCELLANEOUS.

- Air hammer, No. 66 Ingersoll-Rand, long stroke, nearly new.
- Baling press, Champion, for baling scrap tin or iron.
- Blower, steel, No. 10 Sturtevant, 7 ft. high, 18 in. outlet.
- Bolt cutter, 1 1/2 in. Acme, single.
- Bolt cutter, 2 in. Bement, single.
- Bolt pointer, 1 in. Adams.
- Buffing lathe, 2 h. p. motor drive, 110 volts, d. c.
- Cold saw, 20 in. Burke.
- Cold saws, No. 4 Keystone, 4 1/2 in.
- Cold saw, No. 14 Higley, fine order.
- Cranes, portable shop. 1 & 2 ton.
- Grinders, cutter & reamer Cin., (2.)
- Grinder 10x32 in. Landis.
- Grinder, cock. W. & S., single spdl.
- Grinder, disc, 20 in. Ransom.
- Grinder, 20x3 in. Diamond, single wheel, wet.
- Keyseater, No. 2 Mitts & M., 13 in.
- Keyseater, No. 2 Davis, 14 cutters.
- Keyseater, No. 4 Morton, 18 in. stroke, cap. up to 2 1/2 in.; complete.
- Miller, plain, No. 1 Kempsmith, lat-est type, fine order.
- Miller, W. & S., 2 spindle valve.
- Pipe mche., 4 in. Borden, complete.
- Pipe machine, 4 in., No. 5 1/2 Merrill.
- Planer, 16x16x3 1/2 Putnam, 1 head.
- Planer, 24x24x5 Betts, 1 head.
- Planer, 42x36x12 Sellers, 4 heads.
- Profiler, 2 spindle, Ames, fine order.
- Pulley boring machine, 36 in. Streit.
- Pulley boring machine, 60 in. Niles.
- Pulley turning machine, 60 in. Niles.
- Pulley turning mche., 30 in. Henley.
- Pulley turning mche., 36 in. Stevens.
- Punch press, combination gear and fly wheel, 3,000 lbs. Crosby.
- Punch press, No. 4 Walsh, o. b. inc.
- Punch press, No. 4 American Can, open back inclinable.
- Punch or shear, single, No. 6 Lang & A., 6 in. throat, cap. 3 1/2 in.
- Punch or shear, cap. 1 1/2 x 8 in. Hercules, 11 in. throat, gd. sgl. end, wt. about 10,000 lbs.
- Rivet spinner, 3 in. National.
- Screw machine, 2 in. Cleveland, standard automatic, 5 hole turret.
- Screw mche. No. 6 W. & S., 2 in. cap.
- Screw mche. No. 1 P. & W., 7-16 in. cap.
- Screw machine, Windsor 1 1/2 in. cap.
- Screw mche., 7-16 in. Cleveland auto.
- Screw mche., 1 1/2 in. National-Acme, automatic, nearly new.
- Shapers 16 in. Milwaukee, b. g. crank.
- Shapers 16 in. Hamilton, b. g. crank.
- Shapers 16 in. Hendy, friction.
- Threading mche., roll, Rudolphi & K.

SECOND-HAND MACHINERY

FOR SALE BY

Niles-Bement-Pond Company,

111 Broadway, New York.

Located at Chicago, Boston and New York.

LATHES.

B. & D. single axle lathe.
No. 2 Bement double axle lathe.
No. 3 Putnam extra heavy axle lathe.
10x5 Champion, standard.
13x6 P. & W., r. and f. rest, taper.
14x5 American, square arbor.
14x6 F. B. Miles, comp. rest.
14x6 LeBlond standard.
16x6 speed lathe.
18x6 Blaisdell, rise and fall rest.
19x6 D. W. Pond, turret tool post.

20x10 LeBlond q. c. & comp. rest.
21x6 Bridgeport, turret boring.
21x8 Star, turret carriage.
22x10 F. B. Miles, comp. rest.
22x12 Niles, back geared.
22x16 Fitchburg.
21 and 48 in. Harrington, gap, boring and chuck.
36 in. Niles car wheel borer.
42 in. Niles steel car wheel lathe.
42 in. x22 ft. Niles, tr. gd.

TURRET MACHINERY.

3 in. No. 0 Hartford, automatic.
3 in. No. 00 Hartford, Pratt & Whitney, automatic.
3 in. No. 0 Pratt & W., wire feed.
3x1 in. National-Acme, 4 spindle, automatic.
3 in. No. 1 P. & W., wire feed.
3 in. No. 1 Garvin, wire feed.
3 in. No. 1 Spencer, turret, auto.

3x4 in. P. & W., tur., new mod.
1 1/2 in. Gridley automatic.
2 15-16 in. No. 3 Niles, screw mche.
20 in. x7 ft. 6 in. F. E. Reed, chucking lathe.
24 in. Conradson, semi-automatic.
28 in. x12 ft. Milwaukee, turret lathe.
21-32x1 1/2 in. No. 2 Brown & Sharpe, automatic.

PLANERS.

17x17 in. x4 ft. Whitcomb.
26x23 in. x16 ft. Ferris & Niles, 2 hds.
26x27x6 Pratt & Whitney.

30x30 in. x24 ft. Sellers, 2 heads.
32x32 in. x14 ft. Niles.

SHAPERS.

18 in. Cincinnati, double head, traverse shaper.

15 in. Hendey, friction.
32 in. Cincinnati.

DRILLS.

13 in. No. 1 sensitive friction, 110 volt, d. c. motor.
30 in. Gould & E., sliding head.
36 in. Gould & E., sliding head.
48 in. Niles, sliding head.
Prentiss port. univ. rad., cap. 2 in.
4 ft. 6 in. Barr, plain radial.
5 ft. 6 in. Niles, semi-universal.
6 ft. 10 in. Niles No. 2, semi-univ.
7 ft. 6 in. Niles No. 5, full univ.

10 in. 2 spindle Slate, sensitive.
12 in. 2 spindle Foote-Burt, sensitive.
14 in. 3 spindle Garvin, gang.
14 in. 4 spindle D. P. N.
17 in. 4 spindle J. & L., gang.
14 in. 6 spindle No. 3 Garvin, gang.
6 spindle special Langelier.
No. 10, 10 spindle Pratt & Whitney cap. 1 1/2-16 in., 220 v., d. c. motor.

BORING MILLS.

36 in. No. 2 Brown & S., vert. turret.
Nicholson & Waterman boring machine, 3 in. spindle.
Kelly horizontal, 2 in. spindle.

Bement & Son horiz., 2 1/2 in. spindle.
Stearns 96 in. special cylinder borer.
7 ft. Pond boring and turning mill.

GRINDERS.

14x2 in. Gould & E., water tool.
18x2 in. Pedrick, double wet tool.
24x3 in. Pedrick, double wet tool.
20x1 1/2 in. Ransom, water tool.

3 in. Sellers drill grinder.
Diamond polishing stand.
No. 0 Northampton polishing jack.

MILLING MACHINES.

No. 2 Brown & Sharpe, universal, 20x10x16 in.
No. 4 1/2 Becker-Brainard, plain, 24x7x16 in.
No. 5 B. & B. plain, 9x3x7 in.

No. 3 B. & B. universal 32x8 1/2x20 in.
No. 2 Garvin, plain, 31 1/2x5x16 in.
Garvin single spindle profiler, table 21x24 in.

STEAM ENGINES (New.)

10x10 28 h. p. horizontal single cylinder c. c. automatic.
12x12 45 h. p. horizontal single cylinder c. c. automatic (2).
12x12 45 h. p. horizontal single cylinder c. c. throttling (2).

Bicycle
Cut-off
Cutting
Forging
Hack s
Hamme
lb., B
Hamme
Iron fo

Frank

800 lb.
frame

12x6 H
18x8 Ra

Grinder
field l
Miller,
Miller,
Profiler

A. D. V

9x42 in.
13x6 Pr
16x8 Bl
16x8 Da
spindle

No. 3 I
in. Cl
in. Pr
in. Cl
in. Cl

3 spindle
6 spindle
24 in. K

No. 2 G

15 in. A
20 in. H
32x32x8

No. 77 T
No. 3 1/2

Grinder
Hamme
Hamme
Morg
Hamme
Our la
drop us

SECOND-HAND MACHINERY

Niles-Bement-Pond Company—Continued.

MISCELLANEOUS.

Bicycle tube hand rolls.
Cut-off machine, 2½ in. Betts.
Cutting-off machine, 10 in. Bement.
Forging machine, 2 in. Blakesly.
Hack saw, No. 2 Robertson.
Hammer, steam, single frame, 1,100 lb., Bement.
Hammer, power, 350 lb. Lingle.
Iron forge on legs, 28x13x8 in.

Planer vise, 16x3½ in.
Planer vise, 10x2 in., swivel base.
Punch and shear, combination, power, ½ in. capacity.
Spiral spring winding mche., Shuster.
Tapping machine, horizontal, No. 1 Garvin.
Vulcanizer, rubber, Hartford, small.

FOR SALE BY

Frank Toomey, Inc.,

127 N. Third St., Philadelphia, Pa.

HAMMERS AND RADIAL DRILLS.

800 lb. Bement Miles & Co., single frame hammer.

36 in. Morris radial drill.
48 in. Gang radial drill (2).

LATHES.

12x6 Hendey, tool room, full eqmnt.
18x8 Rahn-Carpenter.

21x10 Lodge & Davis.
24x10 modern, blocked to 34 in.

MISCELLANEOUS.

Grinders, oscillating surface, Springfield No. 5 (2).
Miller, slab, 36 in.x12 ft., heavy.
Miller, vertical, No. 22 Garvin.
Profiler, No. 13 Pratt & Whitney.

Shaper, 20 in. Smith & Mills.
Shaper, 26 in. Gould & Eberhardt.
Turret lathes, No. 14 Garvin (2).
Turret lathe, 26 in. Bullard, 2½ in. hollow spindle.

FOR SALE BY

A. D. White Machinery Co., 108-114 N. Jefferson St., Chicago.

LATHES.

9x42 in. Shepard, hollow spindle.
13x6 Prentice, c. r., h. s., taper.
16x8 Blaisdell.
16x8 Davis, compound rest, hollow spindle.

18x12 Barker, compound rest, h. s.
20x12 LeBlond, c. r., h. s.
21x12 Davis & Egan, c. r.
28x25 Putnam, compound rest.
30x10 Powell, compound rest.

SCREW MACHINES AND TURRET LATHES.

No. 3 16 in. Pearson screw machine.
½ in. Cleveland, automatic.
½ in. Pratt & Whitney, automatic (5).
½ in. Cleveland, automatic.
½ in. Cleveland, semi automatic.

2 in. Cleveland, automatic.
14 in. Pratt & Whitney, 1½ in. h. s.
16 in. Windsor, raised to 24 in.
18 in. Davis & Egan, 2½ in. h. s.
24x10 LeBlond.

DRILLS.

3 spindle Baker.
6 spindle Fox, sensitive
24 in. Kerkoff, sl. hd.

24 in. Bickford sl. hd.
28 in. Barnes, power feed, b. g.
3 ft. Bickford plain radial.

MILLING MACHINES.

No. 2 Garvin, Lincoln.

No. 0 Owen plain, slotting att.

PLANERS AND SHAPERS.

15 in. American, crank (2)
20 in. Henderson, crank, b. g.
32x32x8 Betts, 1 head.

25x25x6 Sellers, spiral drive.
36x36x10 Gray, 1 head.
35x35x12 Niles, 2 heads.

PUNCH PRESSES.

No. 77 Toledo.
No. 3½ A. Bliss, toggle press.

No. 0 Cady.
No. 75½ Bliss, geared, like new.

MISCELLANEOUS.

Grinder, surface, 18x8 in., like new.
Hammer, drop, 200 lb. Norton.
Hammer, steam, double frame, 650 lb. Morgan & Williams.
Hammer, power, 50 lb. Dienelt.

Hammer, 35 lb. Williams & White, Justice.
Hammer, power, 50 lb. Fairbanks.
Keyseater, 16 in. Morton.

Our latest "Yellow Book" is ready. drop us a postal card.

You can have it regularly if you'll

SECOND-HAND MACHINERY

FOR SALE BY

George Bender, - - - 82 Centre St., New York

MOTORS.

500, at bargain prices, of the following description:
 $\frac{1}{2}$ h. p. alternating current new motors, for 60 cycle, 1 phase, 110 volt current, speed 3,500 r. p. m.
 Price, \$19 each.
 Just the thing for small grinders and buffers.
 Also 500 other dynamos and motors.

FOR SALE BY

The Damascus Brake Beam Co., - - - Cleveland, Ohio

BULLDOZER.

No. 5 Ajax, double geared, steel gears, belt drive; weight 18,000 lbs.

BOILERS.

2 Atlas 60 h. p., 54x14, class M; with trimmings.

TANKS.

2 Standard oil car, 76 in. diameter, 25 ft. 6 in. long, 6,000 gallon; with coils.

INTENSIFIERS.

6 Steam-hydraulic. Send for blue prints.

INDUSTRIAL CARS—SHOP DUMP BUGGIES.

Write for blue prints and specifications.

DRAWING TABLES, ETC.

15 No. 3, made by Economy Drawing Table Co.

12 Standard wood tee squares.

FOR SALE BY

Cincinnati Machinery Co., 308 Johnston Bldg., Cincinnati, Ohio
 Machine Tool Bargains.

ENGINE LATHES.

12x 6 Barnes, p. r.

14x 6 L. & D., p. r.

16x 8 Bradford, q. c.

18x 8 American, c. r.

18x10 American, c. r.

20x10 American, c. r.

24x15 New Haven, c. r.

30x14 L. & D., q. c.

36x25 New Haven, c. r.

38x15 New Haven, c. r.

30 in. Stevens pulley lathe.

PLANERS.

24x24x6 Gray, 1 head.

25x25x6 Pond, 1 head.

22x32x12 Gray, 2 heads.

34x34x5 New Haven, 1 head.

36x26x8 Gray, 1 head.

36x36x14 Niles, 1 head.

48x48x16 Gray, 3 heads.

GEAR CUTTERS AND MILLING MACHINES.

24 in. G. & B., full auto.

30 in. Brainard, half auto.

36 in. B. & S., No. 3, full auto.

48 in. B. & S., No. 5, full auto.

Milling machine, Cincinnati No. 2, universal.

DRILLS.

Radial, 3, 4, 5 and 6 foot, different makes.

Uprights, 20, 24, 32 and 36 inches, different makes.

SHAPERS.

15, 18 and 24 inches, crank, b. g.

PUNCHING AND SHEARING MACHINES.

$4 \times \frac{1}{2}$ in., $4 \times \frac{3}{4}$ in., $6 \times \frac{1}{2}$ in. and 1×1 in., different makes.

MISCELLANEOUS.

Bending rolls, No. 3 Oliver, b. g., p. w. r.

Boring mill, vert., 30 in. Bullard.

Boring mche., hor., Niles, 4 in. bar.

Drilling and milling machine, No. 1 Knight.

Hammer, steam, 800 lb., single col.

Keyseaters, No. 0 and No. 3 Mitts & Merrill.

Milling machine, hand, No. 2 Fox.

Punch press, No. 1 Frech.

Also a variety of other miscellaneous machines, too numerous to mention. If you want anything in machine tools, write us. We can furnish it. We buy machine tools for spot cash or exchange new for second-hand.

Baird

20 ton el

30 ton el

10 ft. Po

24 ft. sta

30 in. sli

No. 3 D

4 ft. Pres

5 ft. Pon

2 ft. Gan

6 ft. Gan

16x6 Rec

18x8 New

18x8 Pre

24x8 Am

22x12 Po

15x5 Dre

16x5 Gag

18x5 Men

2x24 Jon

6 in. Sam

6 in. Wil

No. 5 I

punch

No. 20 W

Cleveland

Niagara

Punch, p

Horizont

No. 2 Da

22 in. Ing

Newton 2

24x24x6 1

36x36x10 1

14 in. Spr

25 in. Gou

5 foot ben

Pneumatic

Rivet forg

Air drills

Boiler, 6 h

Bolt cutter

Cut-off sa

Engine, g

Engine, 8

Grinder, w

Hack saw,

SECOND-HAND MACHINERY

FOR SALE BY

Baird Machinery Company, 23rd & Smallman Sts., Pittsburg, Pa.
CRANES.

20 ton electric traveling, 51 ft. span.	30 ton electric traveling, 50 ft. span.
30 ton electric traveling, 75 ft. span.	20 ton electric traveling, 49 ft. 8 in. s.

BORING MILLS.

10 ft. Pond, double head.	42 in. Dawson, double hd., swiveling.
---------------------------	---------------------------------------

DRILL PRESSES.

24 ft. stationary head, b. g., p. f.	3 spindle Garvin.
30 in. sliding head, b. g., p. f.	20 in. Prentice upright.
No. 3 Dallett portable radial.	4 ft. Fosdick universal.
4 ft. Prentice Brothers radial.	3 ft. Betts plain radial.
5 ft. Pond radial.	6 ft. Western radial half universal,
2 ft. Gang plain radial.	motor driven.
6 ft. Gang plain radial.	

LATHES, ENGINE.

16x6 Reed.	28x16 Blaisdell.
18x8 New Haven.	36x16 Pond, back geared.
18x8 Prentice Brothers.	36x40 Pond, triple geared.
24x8 Ames.	38x34 New Haven.
22x12 Pond.	48x32 Niles, triple geared.

LATHES, TURRET, ETC.

15x5 Drees & Mueller, univ. turret.	18x6 Springfield, universal turret.
16x5 Gage, universal brass turret.	15x6 No. 1 American T. & M. Co.,
18x5 Meridan forming lathe.	square arbor.
2x24 Jones & Lamson, flat turret.	12 in. Warner & Swasey, dbl. key lathe.

PIPE MACHINES.

6 in. Saunders.	12 in. Curtis.
6 in. Williams.	

PUNCHES AND SHEARS.

No. 5 Long & Allstatter, single,	No. 2 Hillis & J., with spacing tbl.
punch & shear	

HAND POWER PUNCHES AND SHEARS.

No. 20 Watson & Stillman light channel.

HAND SCREW PUNCHES.

Cleveland bevel shear, 1 in. plate.	Double heavy punch & shear.
Niagara power circle shear.	Horizontal punch.
Punch, power, for heavy angles, etc.	Horizontal straightening machine.
Horizontal punch, 10 in. throat.	

MILLING MACHINE.

No. 2 Davis & Egan.	24 in. Ingersoll, slab.
22 in. Ingersoll, slab.	

COLD SAWS.

Newton 24 in.	Newton steel foundry, 40 in.
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PLANERS.

24x24x6 1 head.	36x36x8 Detrick & Harvey, open side.
36x36x10 Putnam, 1 head.	48x48x10 Detrick & Harvey, o. s.

SHAPERS.

14 in. Springfield, single geared.	28 in. Hendey, friction.
25 in. Gould & Bernhardt, sgle. gd.	30 in. Morton, draw stroke.

BOILER SHOP TOOLS.

5 foot bending rolls.	Air hoists.
Pneumatic hammers.	5 ft. Pedrick & Ayer riveter.
Rivet forges.	40 lb. L. & A., helve hammer.
Air drills	500 lb. Morgan steam hammer.

MISCELLANEOUS.

Boiler, 6 h. p., complete.	Keyseater, 18 in. Morton.
Bolt cutter, 2 in. Acme, 1 1/2 in. header.	Miller, sing. spdl., 22 in. Ingersoll.
Cut-off saw, Reade.	Nickel plating plant, complete.
Engine, gas, 25 h. p. Bessemer.	Pipe machine, dbl. gd., 6 in. Williams.
Engine, steam, vertical, 6 h. p.	Planer, portable, 60 in. Morton.
Grinder, wet tool, No. 2 Diamond.	Riveter, pneumatic, Herman.
Hack saw, 12 in. Q. & C.	Screw machine, semi-auto., 10 in.

SECOND-HAND MACHINERY

FOR SALE BY

McCabe Machine Co.,

P. A. McCabe, Pres., 95 Liberty St., New York City

Cutter and reamer grinder, all attachments, Becker, near new.
 Drill, 28 in. swing, geared feeds, latest pattern, Prentice Bros., near new.
 Grinder, 10x40 in. with internal attachment, Landis, good.
 Lathe, 45x16 ft. triple geared, extra heavy, New Haven, near new.
 Planer, 27x8 ft., latest pattern, Woodward & Powell, near new.
 Planer, 36x12 ft., two heads, Powell, good.
 Turret lathe, 2x24 in. with die head, Jones & Lamson, good.
 Turret lathe, 2x in. hole, 18 in. swing, pan bed, oil pump, Dreeses, near new.
 "Near new" indicates condition practically good as ever.
 "Good" indicates first-class condition.

FOR SALE BY

O. L. Packard Machinery Co., Chicago, Ill., and Milwaukee, Wis.
LATHES.

22x36x22, plain rest.
 72x22, compound rest, with raising blocks to increase swing to 120 in.

DRILLS.

10 in. Stecher. 5 ft. Bickford universal radial.
 23 in. Barnes, power feed. 5 ft. Cincinnati full universal radial.

PLANERS.

24x24x5, 2 heads on cross rail. 24x24x8, Hendy.

MISCELLANEOUS.

Gear cutter, 36 in. Brainard.
 Hammer, steam, 250 lbs. Bell.
 Keyseater, Morton. Screw mch., 4 in. P.&W., automatic.
 Shear, bevel, Thompson, for boiler plate.

FOR SALE BY

New York Machinery Exchange, 50 Church St., New York City.

Modern Classy Tools, Nearly New.

Drill press, 40 in. Barnes, b. g., automatic feeds.
 Drilling and tapping machine, Foote-Burt, heavy duty.
 Gear cutter, 36 in. Cincinnati automatic.
 Grinder, universal, Iroquois.
 Planer, 30x30 in. x 8 ft. Pond, 2 heads.
 Sand blast outfit, complete, 143 ft. capacity.
 Screw machine, hand, Bardons & Oliver, wire feed, 1 1/2 in. capacity.
 Screw machine, 4 spindle, 3 in. Gridley automatic.
 Screw machine, 4 1/2 in. Gridley automatic.
 Turning lathe, Gridley automatic, for pistons, rings, etc.
 Turret lathe, 18 in. x 6 ft. American Fox.
 Turret lathes, Potter & Johnston automatic, (2).

FOR SALE BY

The Randle Machinery Co., 1739 Powers St., Cincinnati, O.

BOILERS.

Horiz. tubular, from 6 to 150 h. p.
 Fire box, from 8 to 80 h. p.
 Vertical, from 3 to 50 h. p.

ENGINES.

Corliss, from 50 to 350 h. p.
 Automatic, from 15 to 180 h.
 Throttling, from 5 to 150 h. p.

PULLEY LATHE.

60 in. Stevens.

BLOWERS.

No. 2 and 4 Roots.

PIPE THREADER.

4 in. Camden.

PLANER.

42x16 Bement-Laugherty.

AIR COMPRESSOR

8x8x9 locomotive type.

MISCELLANEOUS.

Heaters, tanks, pumps, exhausters, blowers, saw mill and general machinery.
 Write for list. Also a full assortment of new machinery.
 Sole manufacturers of the celebrated "Leader" Injectors and Jet Pumps.

SECOND-HAND MACHINERY

FOR SALE BY

C. C. Wormer Mach'ry Co., 94-96 W. Woodbridge St., Detroit, Mich.

ENGINE LATHES.

11x4 ft. Mahn.
12x5 ft. Springfield, compound.
12x7 ft. Shepard, r. & f. rest.
13x6 ft. Pratt & Whitney, r. & f. rest.
14x6 ft. Flather; Monarch.
14x6 ft. Perkins.
14x6 ft. Springfield, r. & f. rest.
15x5 ft. Prentice, r. & f. rest.
15x6 ft. Nutter & Barnes.
16x6 ft. LeBlond, comp.; Porter, pl.
16x10 ft. Bogart.
16x11 ft. Reed.
17x8 ft. LeBlond, compound, heavy.
18x6 ft. Jones & Lamson, r. & f. rest.
18x6 ft. Lodge & Davis.

18x7 ft. Perkins.
18x8 ft. Hendy.
18x8 ft. LeBlond, compound.
18x8 ft. New Haven.
18x9 ft. New Haven.
19x6 ft. Pond.
20x10 ft. LeBlond, quick change.
21x10 ft. Porter, compound.
21x13 ft. Lodge & Davis, compound.
22x8 ft. Fifield.
22x10 ft. Niles.
22x16 ft. Putnam.
26x22 ft. Fifield.
27x14 ft. Pratt & Whitney.
32x20 ft. Jackson & Wiley.

SPECIAL LATHES.

52 in. Stevens, pulley lathe.
7x31 in. Stark bench, automatic.
60 in. Stevens, pulley lathe, with boring and crowning attachments.
14x11 ft. single head axle lathe.

24 in. Davis, forming & boring.
13 in. x 4 ft. Prentice taper turning.
13 in. x 5 ft. Sebastian, on legs.
48 in. double end pulley lathe.
39x16 ft. column facing lathe.

SPEED LATHES.

9x42 in. Pratt & Whitney.
No. 6 Bliss, spinning lathe, with wiring and trimmings attachments.

20x7 ft. Lodge & Davis, chucking.
12x5 ft. Diamond, with chuck.
12x5 ft. Lathe & Morse.

TURRET LATHES AND

No. 2 American, cabinet, universal.
No. 1 American 15x5 in. sq. arb., Fox.
16 in. W. & S., plain head turret.
18 in. Bardons & O., pl. hd. turret.
No. 2 Brown & S., auto. screw.
3 in. Cleveland, auto. screw.
No. 0 Brown & S., pl. hd. screw.
No. 0 Brown & S., wire feed screw.
24 in. Gisholt, turret, triple gd. hd.
10x3 ft. Warner & S., wire feed.
3 in. Cleveland, automatic.
20 in. x 8 ft. Starr, chucking turret.

2 spindle W. & S., valve miller.
No. 2 Foster-Kimball, pl. hd. screw.
No. 140 Wells, pl. hd. screw.
3 in. Cleveland, auto. pl. screw.
No. 12 Garvin, pl. hd. screw.
No. 3 Hartford, automatic screw.
22 in. Gisholt, turret.
No. 1 Krauth & B., screw, wire feed.
No. 1 Pratt & Whitney, screw.
No. 2 Pratt & Whitney, pl. hd. screw.
21 in. x 7 ft. Lodge & D., chuck 'g tur.
No. 3 Pratt & W., with auto. chuck.

DRILLS.

6 spindle Woodward & R., sens.
14 in. Gardam, 4 spindle.
2 spindle Barr, sensitive.
2 spindle, style A, Fox.
28 in. Snyder, sliding hd., b. gd.
22 in. Barnes, sliding head.
4 ft. American, plain radial.
22 in. Cincinnati, sliding head.
24 in. Bickford, quick return.
Barker Bros., style F, 17 in. swing.
Knecht, friction, sensitive.
20 in. Prentice, stationary head.

10 in. Barnes, friction disc, on col.
10 in. sensitive, on column.
3 spindle Barnes.
20 in. Sibley-Ware, square base.
4 spindle Foote-Burt, sensitive.
20 in. Prentice.
24 in. sliding head, square base.
Binsee, horizontal boring & drilling.
6 spindle Fox, sensitive.
4 ft. Box, plain radial.
14 in. Gardam, 3 spindle, sensitive.
10 in. Dwight-Slate.

SHAPERS.

Die shaper with chuck & tools.
24 in. Hendy, pillar, friction driven.
24 in. Hendy, traverse, 60 in. travel.
15 in. Perkins, friction.
18 in. American, bk. gd., crank.

16 in. Gould E., bk. gd. crank.
10 in. traverse head, 42 in. travel.
10 in. Boynton & P., traverse crank.
24 in. Lodge & Davis, geared rack.
22 in. Walcott, geared rack.

PLANERS.

19x16x3 ft. New Haven.
26x26x5 ft. Gray.
28x28x6 ft. Pond.
32x32x10 ft. Pond, 2 heads.
14 ft. 6 in. Sellers, plate planer.
36x36x7 ft. Sellers.

26x27x6 ft. Wheeler.
22x22x5 ft. Pond.
30x30x14 ft. Miles, 2 heads.
36x36x12 ft. Fitchburg.
16 ft. Niles, boiler plate.
16x16x18 in. Belden, crank.

SECOND-HAND MACHINERY

FOR SALE BY

Chicago Machinery Exchange, 1219-27 Wash'n Blvd., Chicago

We offer for sale the following machines, owing to having replaced them with larger ones:

- Drill presses, Barnes, friction, (2), each \$30.
- Drill, 20 in. Barnes, round base, wheel and lever feed, \$30.
- Planer, 24x24x6 Putnam, single head, \$200.

FOR SALE BY

Buffalo Tool & Supply Co., 15 W. Swan St., Buffalo, New York.

- Boring and turning mill, vertical, single head, 40 in., 1 head on cross rail.
- Cold saw, Nutter & Barnes.
- Gang drill, 24 in. Hofer, 3 machines on one base, all feeds.
- Planer 34x34 in. x9 ft. New Haven, good as new.
- Planer, 48x48 in. x11 ft. 6 in. New Haven, 1 head on cross rail, all feeds, extra fine condition.

FOR SALE BY

The Warner Elevator Mfg. Co., - Station B, Cincinnati, Ohio

These items will prove a rare opportunity to anyone in a position to avail themselves of them, as they will be sold at very low prices.

NILES LATHE.

One old style 50 in. Niles lathe with 13 ft. bed, suitable for boring and turn'g.

HORIZONTAL BORING BAR.

One Horizontal Boring Bar, bores from 16 to 36 in. dia. and up to 18 ft. long.

DRILL PRESSES.

- 24 in. Schumacher upright drill, sliding head, power feed, back geared.
- 20 in. Bickford upright drill, sliding head, hand feed.

Any of the above tools can be seen in operation at our factory.

ENGINE.

One Horizontal Slide Valve Engine, 12x24 in., 80 h.p. Pulley 6 ft. diameter, 18 in. face. Sectional fly wheel 10 ft. diameter.

FOR SALE BY

The Cincinnati Planer Co., - - - Cincinnati, Ohio.

Second-Hand Tools—Bargain!

PLANERS.

24x24x6 s. h. std. Cinti.....	\$ 550	72x60x12 Pond, s. h. & s. h.....	\$2,500
30x30x14 d. h. l. p. Cinti.....	1,100	74x56x20 J. W. Pond, 2 heads.,	
30x30x15 Cinti, s. h. arr. for d.h.	1,000	replaned and overhauled.....	2,900
34x24x12 Cinti, d. h.....	1,100	Niles floor head.....	350

LATHES.

15x5 Drees, turret.....	\$200	16x16 automatic screw.....	\$550
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DRILL AND BORING MACHINE.

14 in. sensitive, American.....\$ 35

MISCELLANEOUS.

Balancing way, No. 2 Bowsher \$ 25	Hoist, C. & M., triplex, 5 ton.....\$ 56
Cranes, hand, 5 ton, 30 ft. span	Hoist, Y. & T., triplex, 8 ton..... 80
without hoist, (2) each..... 250	Motor, 25 h. p. Commercial..... 200
Hack saw, Miller Falls..... 12	Variable sp. c. s., No. 3 Reeves 20
Hoist, Harrington, 4 ton..... 48	Variable sp. c. s., No. 4 Reeves 30

All of the above machinery is in first-class condition. Prices f. o. b. Cincinnati.

SECOND-HAND MACHINERY

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,
210-212 Washington Ave. St. Louis, Mo.

16x12 Lodge & Davis.
18x8 Flather.

6 spindle Quint drill.
14 in. Barr, sensitive, two spindle.
28 in. Pond, sliding head.
28 in. Barnes, sliding head.

30x30x8 Flather.

8x8 belted.
10x10 belted.

Air tank, 36 in. x 6 ft.
Air tank, 36 in. x 8 ft.
Bolt cutter, 1 1/2 in. National.
Bolt header, 1 in. National.
Boring machine, horizontal, Betts.
Bulldozer, No. 8 Williams & White.
Hammer, 50 lb. Beaudry.
Hammer, strap, 50 lb. Bradley.
Hammer, vacuum, 80 lb. Yeakley.
Keyway cutter, No. 6 Morton.
Motor, 15 h. p. sgle. phase, Wagner.
Motor, 15 h. p., 3 ph., 60 cycle, 220 v.

LATHES.

48 in. column facing, double head.
50x16 New Haven.

DRILLS.

32 in. Lodge & Davis, sliding head.
36 in. Dreses, radial.
60 in. arm, plain radial.
60 in. Bickford, with tapping att.

PLANERS.

36x36x12 Niles.

AIR COMPRESSORS.

10x12 belted.
960 cu. ft. steam driven.

MISCELLANEOUS.

Miller, universal, No. 1 Brown & S.
Press, power, No. 4 American Can.
Press, power, 17 in. throat.
Punch, single, 12 in., 1/4 in. 1/4.
Punch and shear, 48 in. throat.
Punch and shear, dble. No. 5 L. & A.
Screw machine, No. 1 Dreses.
Screw machine, 2 1/2 in. American.
Screw machine, semi-automatic 1/2 in. Cleveland.
Tube cutter, 2 in., rotary.
Wheel press, 36 in. hydraulic.

THE LODGE & SHIPLEY MACHINE TOOL CO.

Second-Hand Machine Tools

For Sale at Bargain Prices.

LATHES.

One 24 in. x 8 ft., 5 step cone head, quick change gear, Lodge & Shipley Engine Lathe.
Two 3 1/2 in. x 60 in. Fitchburg L. & S. Swing Lathes.
One 2x24 in. Jones & Lamson Flat Turret Lathe.
One No. 3 Lodge & Shipley Rapid Reduction lathe, with 8 ft. bed.

PLANERS.

One 36x36 in. x 10 ft., 3 head, Sellers.
One 36x36 in. x 26 ft., 4 head, Sellers.
One 42x62 in. x 20 ft., single head, Putnam.

MISCELLANEOUS.

One Whiton Revolving Centering Machine.
One Franklin Cold Saw, 3 1/2 in. capacity.
Two No. 3 Nutter-Barnes Cold Saws, 6 in. capacity.
One No. 2 Higley Cold Saw, 6 1/2 in. capacity.
One Schuster 1/2 in. Riveter, Model "A."
One Mumford 12x40 in. power ramming Molding Machine.
One Globe Power Hack Saw, 8 in. capacity.
One Universal Power Hack Saw, 6 in. capacity.

The Lodge & Shipley Machine Tool Co.

CINCINNATI, OHIO, U. S. A.

Starts And Stops Instantly

A Lever does the trick! Saves an hour a day!



The Whitney Lathe

BUILT LIKE A MACHINE TOOL, it has everything that an ideal polishing and grinding tool should have. Belted from below, it does away with idlers, clutches and countershafts. The steady, true running wheel speeds up to 5,000 r. p. m. The wheels may be hooded so as to remove all dust as fast as formed. Highly economical because it saves time, belting and repairs.

Write today for catalog and prices

The New Britain Machine Co.
60 Chestnut St., NEW BRITAIN, CONN.

